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Municipal Buildings.—Mr. G. Corson, Architect ..... *Single-Page Photo-Litho.*
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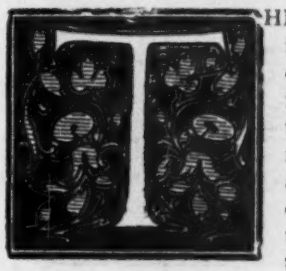
The Architecture of Our Large Provincial Towns.

III.—LEEDS.



THE best of towns, in this climate, can hardly look its best at this time of year; but making all allowance for this, one cannot but think that Leeds, under the most favourable circumstances, is a city of somewhat dull and depressing aspect. Among the causes of this impression may perhaps be named the smokiness of the air, which has hopelessly dulled all the older buildings (though this cause affects Manchester equally); the tendency to rather heavy and level lines in its buildings; the extensive use of stone paving in large setts, which gives a hard and dreary appearance to the streets; and the great number of unfinished and dilapidated corners upon which one comes, as if the town had been under a process of dismantling and rebuilding which had been suddenly arrested. Among minor points we observe one evidence of neglect which the authorities ought to give their attention to, viz.: the exceedingly defective naming of the streets. We have seldom been in any large town where it is so difficult for a visitor to discover in what street he is; there are numbers of corners of important streets where no name is to be seen, and there seems to be no settled practice as to the manner of writing up the names; occasionally there is a metal tablet; in many cases names have merely been painted up in white on a black ground and left to become nearly effaced by the smoke-blackening process. This may be considered a trifle, but it indicates a want of energy and method on the part of the municipal authorities.

Leeds, in its centre portion, is one of the irregular order of towns, in which you are apt, as in Manchester, to find yourself back at your starting point unexpectedly. There are few central vistas; everything is at odd angles. There is no good approach to the Town Hall, in an architectural sense; one only comes upon it cornerwise. Briggate, the long winding street which runs from one of the Aire bridges right up the eastern portion of the town, is a fine specimen of the old-fashioned irregular city thoroughfare, and has the making of the picturesque in it; but unfortunately the buildings which line it are for the most part uninteresting and commonplace, and there does not seem much chance of an improvement in this respect.

The Town Hall, built about forty years ago from the designs of the late Cuthbert Brodrick, may be said to stand second only to St. George's Hall, Liverpool, as an example of a great building of the Classic revival in this country. The comparison comes in the more naturally, as its architect certainly owed something to St. George's Hall. In the treatment of the order in the form of pilasters, at the back of the building, with the string-courses breaking the spaces between them half-way, we are reminded of St. George's Hall (without the space behind the upper portion of the pilasters); and in the interior we are much reminded of the other building in the decoration and general form of the semicircular ceiling, only that instead of using a homogeneous barrel vault with a "Welsh vault" cutting into it, as Elmes did, Brodrick breaks the main vault into compartments by arches or soffits springing from each set of coupled columns. Elmes's treatment has the finer effect, Brodrick's is probably better for sound, as interrupting the travelling of echoing waves along the vault.*

In regard to the exterior Leeds Town Hall is less pure in style than St. George's Hall, nor does it show anywhere the originality of treatment which is so remarkable in some portions of Elmes's building. The body of the building is a huge rectangular block with the simple architectural adornment of a Corinthian order used impartially all round it—as columns in the portico, as engaged columns on the rest of the front and one side, and as pilasters at the back and the other side. The same cornice runs all round. There is nothing very interesting in this; and the monotony of it is hardly very much relieved by the attempt to break the sky-line by the continual repetition of terminal vases on the balustrade. If we reckoned them rightly there are eighty-eight of these decorative pots on the main building, twenty on the tower (besides the four larger ones at the angles), and sixteen altogether on the ventilating shafts or smoke-flues. One hundred and twenty-four unmeaning vases, which have no use whatever except to look gimcrack (the four large ones on the tower are required—or *something* is required—to fill up the angle), on one building. One wonders that the architect was not almost ashamed to see them going on. But the building is saved, and given its one advantage over St. George's Hall, by the tower, in which the employment of the open colonnade of a smaller scale has a very light and graceful effect, and the whole tower is well proportioned, and, moreover, original in general design and composition. When all the stonework was fresh and bright the effect of the building must have been very fine and striking; it has unfortunately suffered terribly from the smoke of Leeds, and is a standing instance of the unsuitability of pure Classic architecture to our climate; though it is certainly remarkable that the four lions, which were placed on the pedestals in front of the building two or three years after its completion, are nearly white still, or at least only a full-toned grey, and seem to have had some charm against the smoke demon which the masonry of the building has not had. These lions, which form a symmetrical group architecturally, but each differ in attitude, are meritorious beasts of their class, with a good deal of force and character about them.*

Internally the hall is certainly a fine one, though it lacks the grand effect of the deep embrasures of St. George's Hall, and the columns are only "scag." The end gallery, with its front, in a reflex curve, extended to the second bay, has the practical merit of seating a number of people comfortably and in a good position for hearing, but detracts very much from the architectural effect. The orchestra, it is to be presumed, like that at St. George's Hall, is a subsequent addition, under which the columns of the last bay disappear in a very awkward manner, but this possibly is not to be charged to the original architect. The hall

* The opinion seems to be now that the large hall at Leeds is good for music but bad for speaking. A good many years ago, if we remember right, there was a general opinion that it was bad for music, and steel wires were stretched across, according to a method sometimes recommended, to break up the echo; these we observe are no longer there, so it is to be presumed that they were not found to be of any practical service.

* They are not seen in our illustration, which is from a photograph taken before the lions were placed (the pedestals will be seen on it), and also before the building was smoke-blackened.

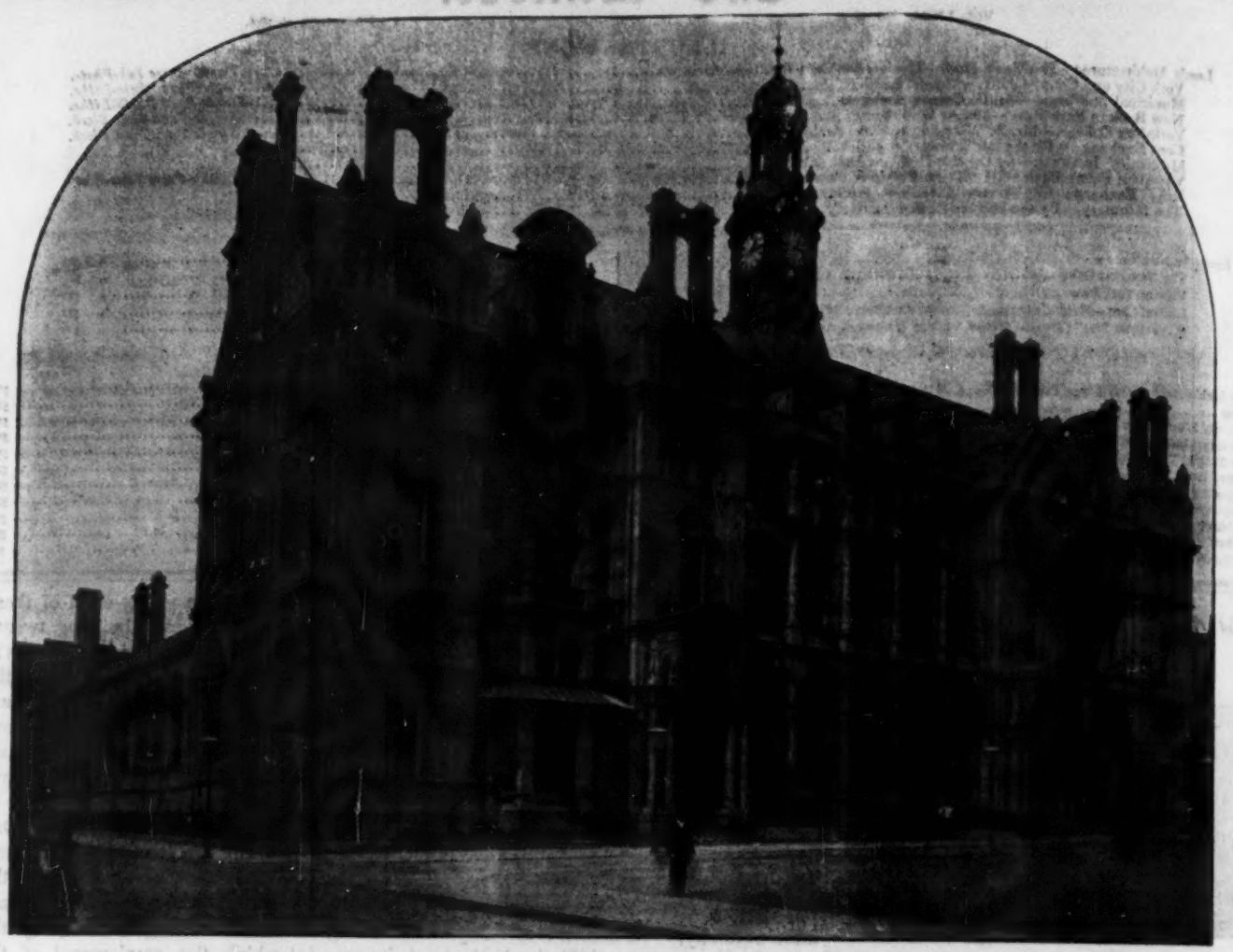


Fig. 1.—The New Post Office.

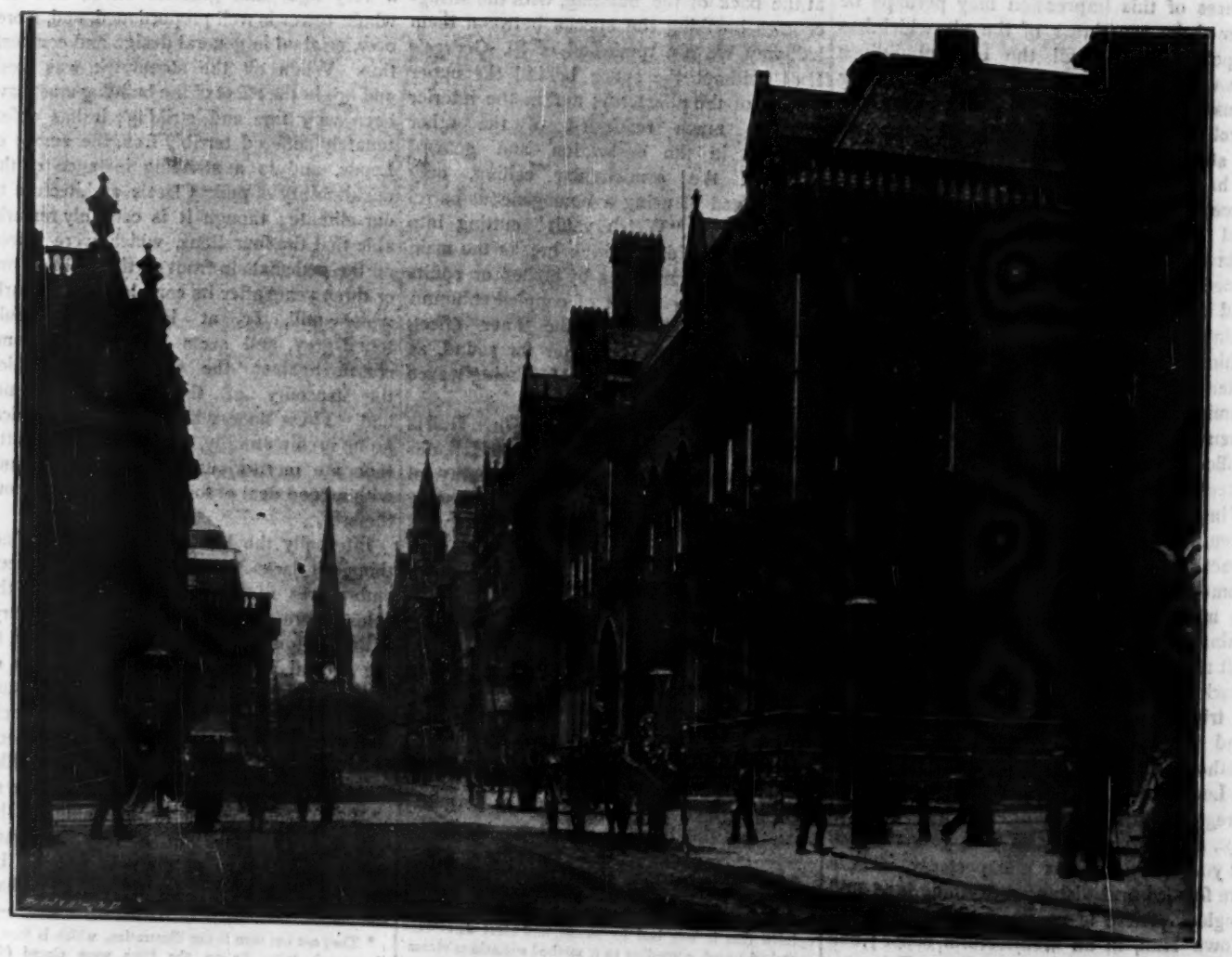


Fig. 2.—View up Park Row.

Fig. 3.—Liberal Club. Messrs. Chorley & Connon, Architects.

is rather insufficiently lighted, from lunette windows above the order, which do not appear on the exterior of the building, and they are filled with decorative (?) glass which is detestable in colour and design. One of the first things the Corporation should do, when they have a little spare money to expend on the hall, is to refill those windows in a more artistic manner.

As in St. George's Hall, the Law Courts and the rooms connected with them open from passages running round the great hall, which are in some places very inefficiently lighted, to a great extent by that wretched system of borrowed lights in the doors, though they are not nearly as bad as St. George's Hall, where artificial light is required in the corridors always. The Law Courts, internally, are not so monumental-looking as those in Street's building, but they are a good deal more cheerful and comfortable, and the provision for the public excellent, both in comfort and extent, and far different to the wretched cramped galleries in the London Law Courts. There is not, however, any separate entrance for the public from the street, which leads to a good deal of mixing in the lobbies.

The Town Hall would make a dignified centre to a "square" of good buildings, but there is a great deal to be done yet before this is accomplished. Indeed, one of the things that strikes one in Leeds is the curious manner in which houses of a mean and inferior class are left, apparently for an indefinite time, close to and mixed up with large and important buildings. Look at the houses immediately behind the north-west angle of the Town Hall, and those facing its front; or at the kind of houses which continue the street line in South-parade after one has passed the Bank of England and the Conservative Club. This mixture of superior with mean buildings is no doubt met with temporarily in every town, but it certainly seems to strike one as rather too permanent in Leeds. The Town Hall has been completed nearly forty years, but compare its surroundings with those of the Town Hall, Manchester, and the Town Hall and St. George's Hall, Liverpool, and surely the contrast must strike the mind of the Leeds man if will he will make the comparison. One side only of the Town Hall Square at Leeds is occupied in a worthy manner, that where the Municipal Offices and the School Board offices stand

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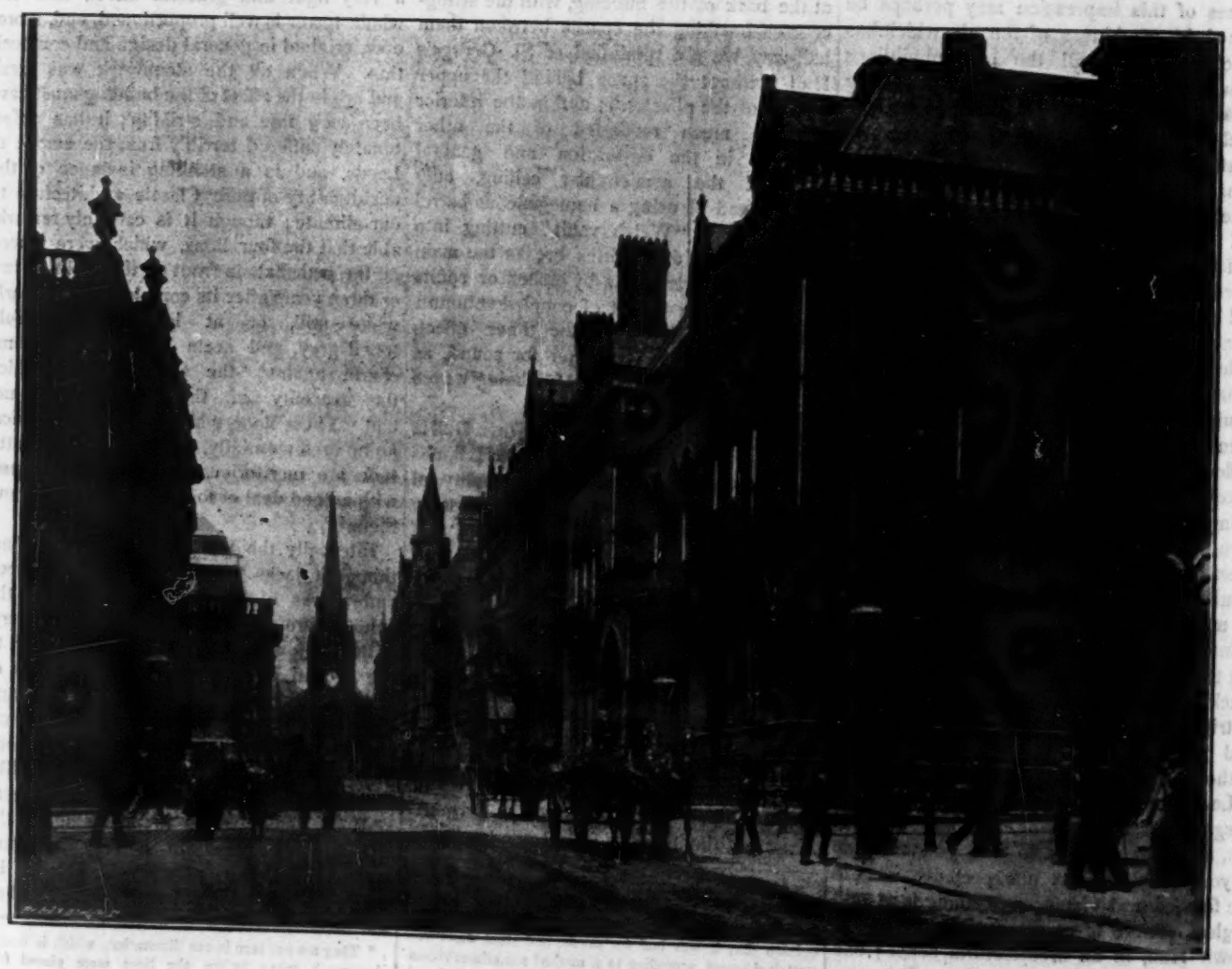

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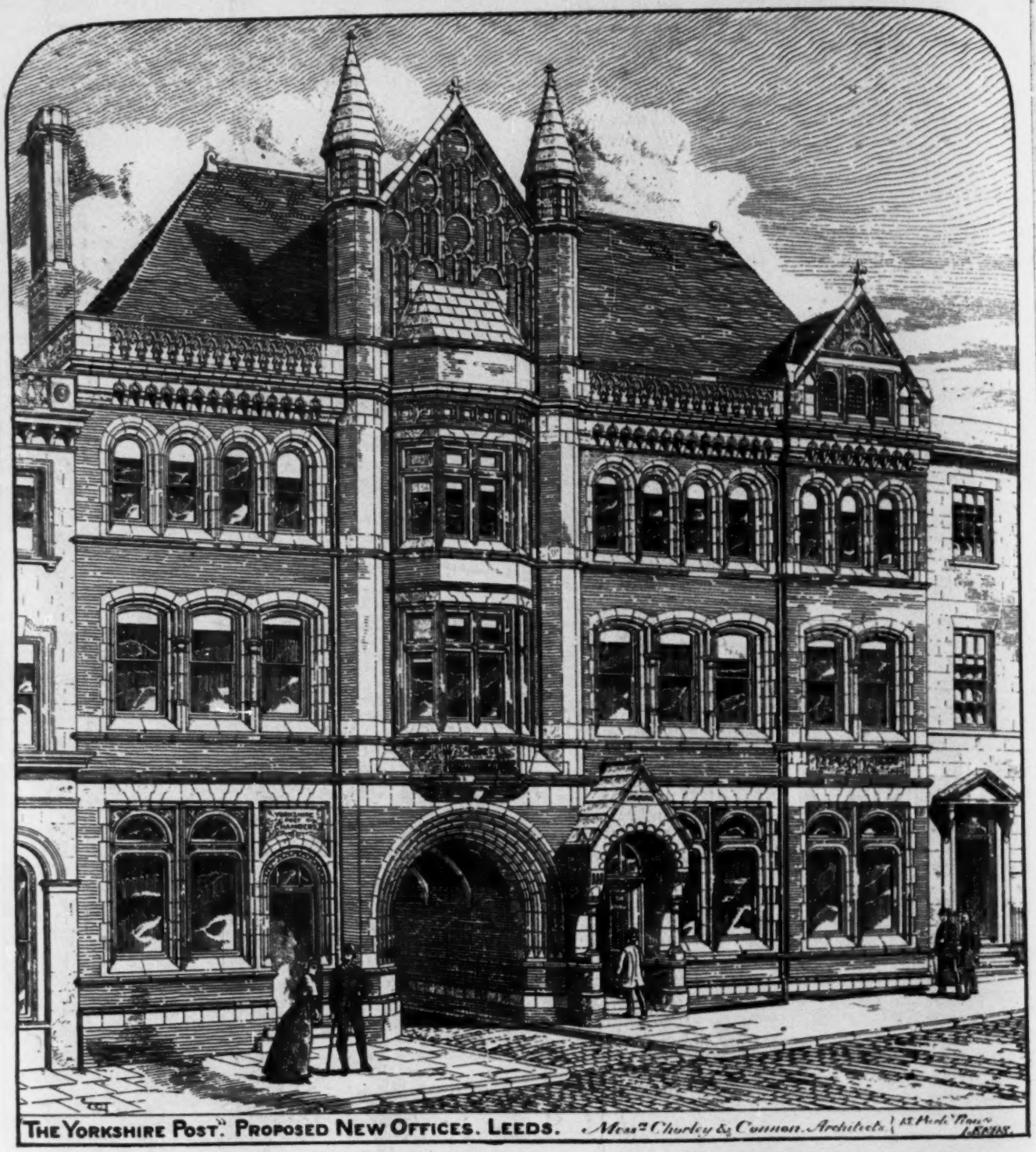

Fig. 4.

parallel with the flank of the Town Hall. The Municipal Offices, as will be seen from our lithograph illustration, is a quietly designed building; probably it was thought that the neighbouring Town Hall furnished all the municipal pomp necessary for the situation, and rendered the distinction of a tower unnecessary and out of place. The façade of the Municipal Offices owes its decorative effect to coupled columns and pilasters in the first two stories, the rather thin granite columns of the entrance standing out somewhat too prominently amid the dulled stonework of the remainder of the front. The heavy pyramidal roofs of the ends and centre give a certain marked character to the building—a character not much in keeping with the Town Hall, though that is of no particular consequence. Internally, in spite of round arches, the general feeling is much more Gothic than Renaissance in the general appearance of the staircase and its decorations, and the treatment of the stone piers in the library rooms, with their flat foliage carving. The style of the stained glass (in the doors, &c.) and of the tile dados is rather "loud." There is a good deal of very clever and effective arrangement, however, in the two staircases, the open arcades of which allow one staircase to be seen from the other, across the central vestibule which runs up to the roof. The style of the staircase partakes both of Gothic and Italian feeling; Gothic in the details, Italian in general lines and arrangement; and the massive but simple marble balustrades of the staircase are in good taste. It is to be regretted that the skylight at the top of the vestibule has not been more decoratively treated; the lower portion seems to demand something better and more ornate as a termination to it than the plain skylight with its straight heavy sash bars. The Leeds School Board building, which stands parallel with the Municipal Offices, is a dignified building externally; unfortunately the entrance and the effectively treated vestibule give access to a corridor between two ranges of rooms, which would be absolutely dark but for the lamp which hangs in it. The School Board and the Municipal Offices are both by Mr. Corson. Round to the right of the Municipal Offices, and forming architecturally one block with it, is the Art Gallery designed by Mr. Thorp. Externally this is a very plain stone building flanking a narrow lane; there is at all events nothing to find fault with in the exterior; it is practically a confession that there were no funds to spend on the external decoration and that its object is simply to form a cover for the art collections of the Corporation. Externally the ground floor is

occupied in the first place by the sculpture gallery, a solidly built apartment divided into three aisles by columns, and with a ceiling formed by segmental arches turned between the transverse girders; it is lighted from one side, as a sculpture gallery should be, but unfortunately one half of the casts are ranged with their backs to the light, which renders them useless for study or drawing. Light a sculpture gallery from one side, certainly; but all the works should be placed facing the light. Beyond this, however, the galleries in which the pictures are arranged, both upstairs and downstairs, are admirably lighted and most suitable for their purpose, The upstairs rooms are at present occupied by a loan collection of Turner water colours and studies of great interest; but what is more to our purpose at present is that in the ground-floor rooms is a sketch by Mr. Bakewell (architect) of the proposed treatment of the open space of now waste ground flanked on one side by the Queen's Hotel and on another by the new Post Office. It is proposed to place an equestrian statue of the Black Prince, by Mr. Brock, in the centre of this *place*, surrounding it at some distance by a balustrade with lamp-holding female figures designed by Mr. Drury, the models of two of which, "Morn" and "Even," along with a model of the equestrian statue, are exhibited in the Art Gallery. The equestrian statue is a good one, and the lamp standard figures by Mr. Drury are charming, quite above the usual run of works of that kind in England, and (but for one detail) more what we might expect to find in connexion with some public improvement in Paris. It is to be hoped that this work will be carried out; it will certainly be a credit to the city.

It is a pity that the proposed new *place* has nothing better, to back the long side of it, than the new Post Office (fig. 1), an emanation of course from the Office of Works. Passing close to the front and looking only at the lower portion, we were at first a little agreeably surprised: the details of the lower portion are the best part, and the work has been carried out with great care; the railing also is not a bad design for cast iron, certainly much better than the more pretentious design at the new block of the London Post Office. But a survey of the building as a whole, unfortunately, soon puts to flight these feelings of partial satisfaction; it is a weak and commonplace elevation, made worse by the wretched proportions of the paltry little clock tower which crowns it. It is too bad that our post-offices should be made the medium of thrusting this mediocre official architecture into one town after another, regardless of local style and associations. If it is necessary or convenient (as we can easily understand that it may be) that a post-office should be planned and arranged at the Office of Works, according to a fixed programme as to what is wanted, and the manner of providing for it, at least a local architect might be allowed to give it an architectural setting in keeping with the locality, and more interesting and picturesque than Office of Works architecture.

The Royal Exchange, one of the older of the modern buildings (by Mr. Healey of Bradford) forms a corner building facing this proposed *place*, and is a meritorious piece of modern Gothic of somewhat florid character. The angle (where the entrance is) is treated as a small tower, not improved by the rather prominent crocketed finials round its top, and some of the foliage carving is too exuberant; the statues in niches on the building have a good effect and appear to have been carefully carried out; there is a breadth of treatment about the whole of the small front, with its large mullioned windows.

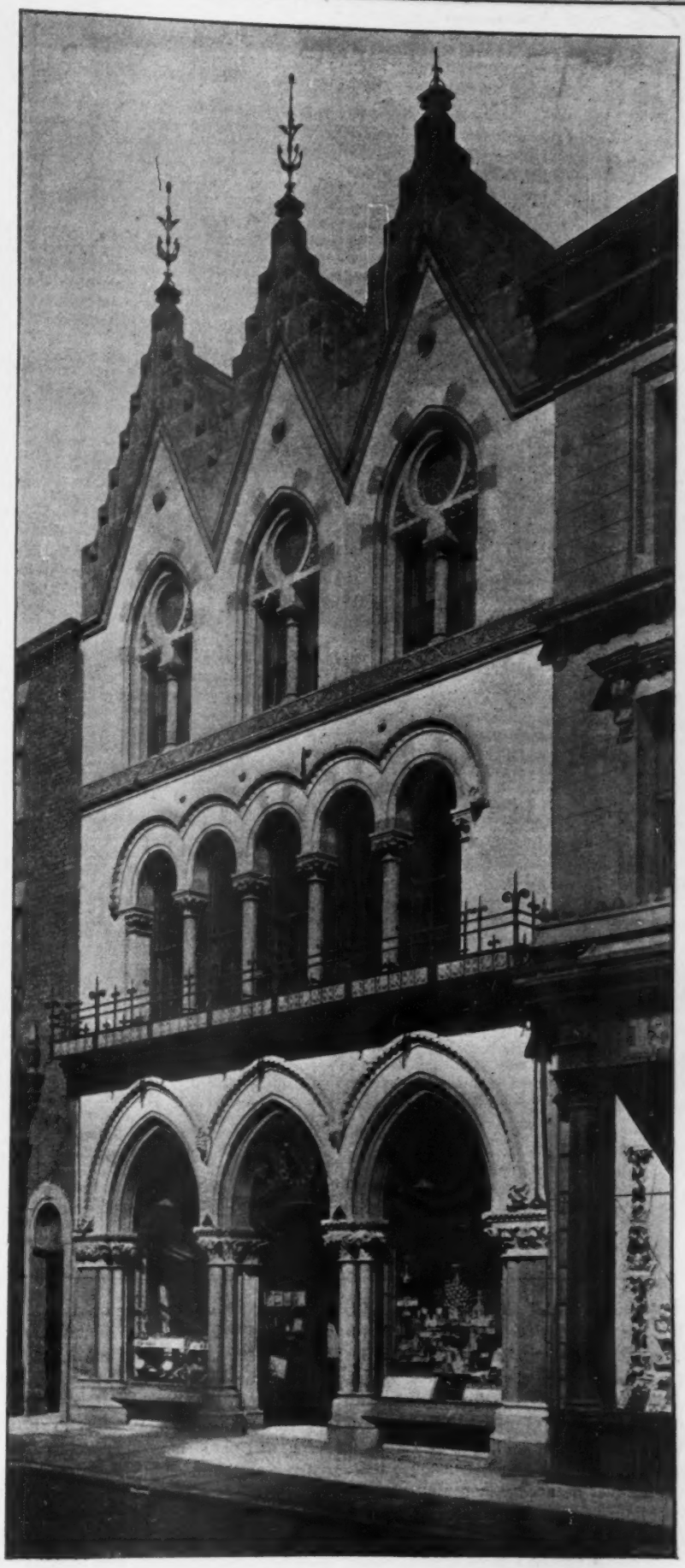

Fig. 5.—Shop in Commercial-street.

Not far from this one of the most important new buildings is the Yorkshire Penny Bank, by Messrs. Perkin & Bulmer (see plate), a much larger and more costly-looking building than one would expect a penny bank to prove; but the penny is a power, and by its use the pounds have evidently taken care of themselves. A view of the building is given in our

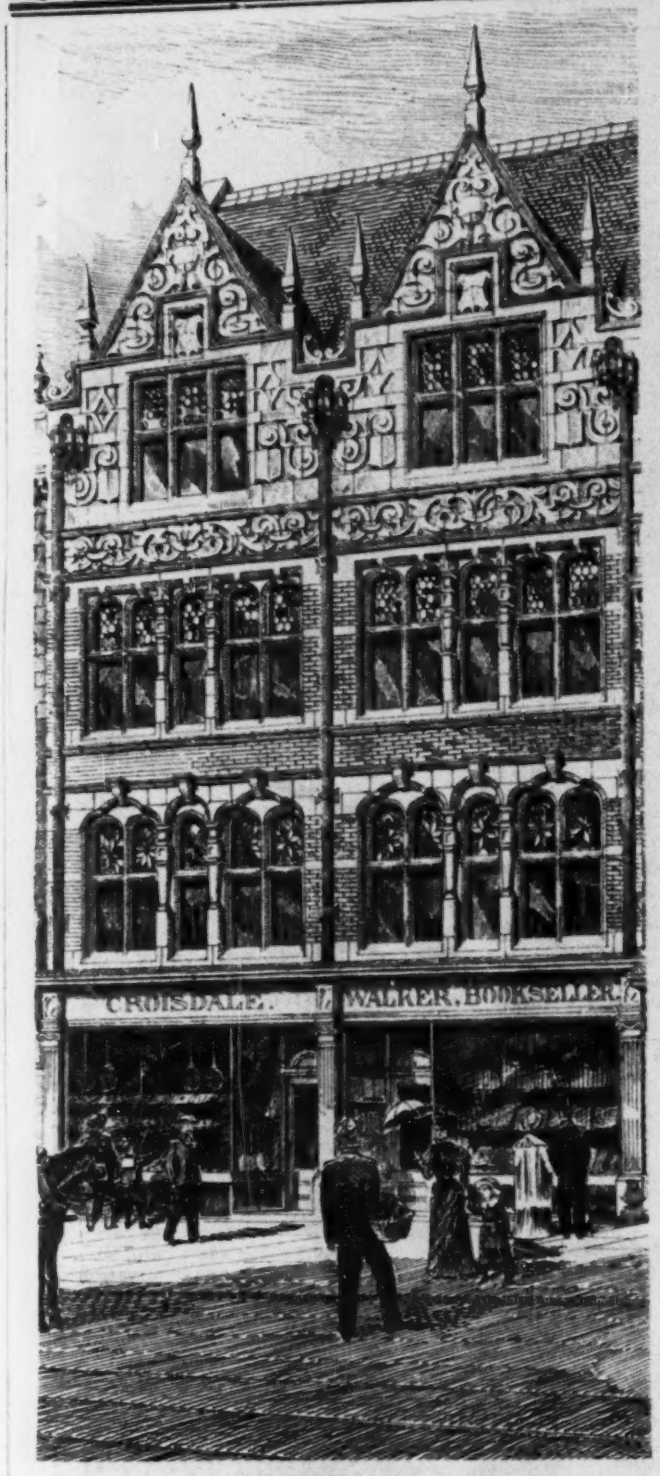

Fig. 6.—Shops in Briggate.

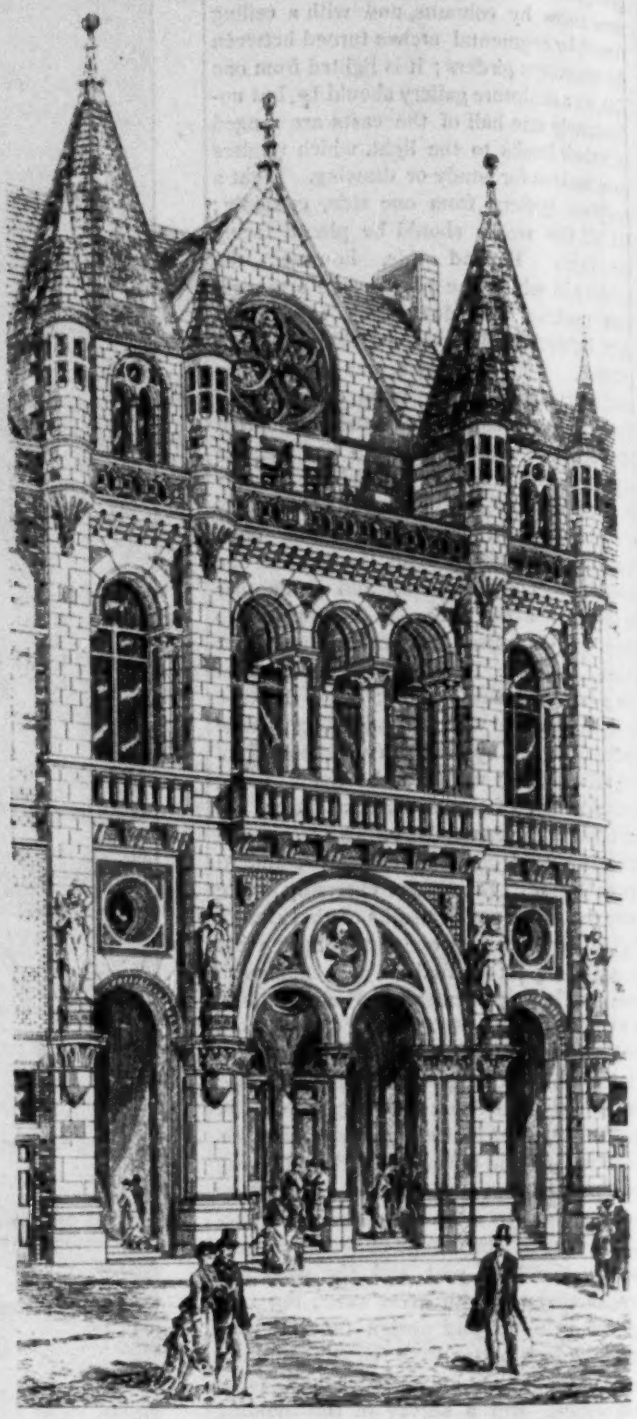

Fig. 7.—Front of Theatre in Briggate. Mr. Geo. Corson, Architect.

sheet of small illustrations; it is a finely-built, solid stone building of considerable originality, especially in the angle feature; its fault is a want of refinement and reticence in detail; there are too many details and many of them are rather coarse (*e.g.* the band of sunk panels forming a horizontal feature—far too deeply sunk and pronounced); there is a great deal of accessory sculpture—gargoyles, lions, &c.—which is more restless than interesting. The gargoyle is a form of parasite which rather infests Leeds modern architecture, and seems to attack all sorts of buildings, Gothic and Renaissance alike. In a neighbouring street, parallel to the last-named and also running from the *place*, is Messrs. Chorley & Connon's Liberal Club (fig. 3), the size and enriched character of which suggest that Liberalism flourishes in Leeds. This is a brick and terra-cotta building, the ground story rusticated (in rather thin courses); above this the principal source of effect is the order of enriched terra-cotta columns in the first story, with a frieze over them which makes a wide and rich horizontal band right along the front, and binds the whole together. Though the plasticity of terra-cotta is very freely made use of in this front, the decorative details are kept to a small scale and are not allowed to become obtrusive; the decorative gables, however, though they look very well in front, look bad when seen sideways from having so little real roof to back them; and another most decided mistake, to our thinking, was to set forward the glass-plane of the ground-floor windows in front of that of the upper windows. We could not think at first what made the ground story look so weak; this was the cause of it, and if the glass had been placed under that of the first-floor windows, leaving the deep reveal on the ground-floor, the building would have looked much more powerful than it does.

The most important combination of architectural work is in Park-row, a short street which, for its remarkable succession of large and dignified buildings, may be likened to Pall Mall on a smaller scale. At the lower end (on the east side) is a school building of the Gothic revival, showing the hand of an architect who knew his Gothic well; the work of the late Mr. Crowther. Next to this is the half-finished National Provincial Bank, which promises well. The bank floor is emphasised by three large circular-headed windows, with a carved string-course over them with masks at intervals; over that brickwork; over the door, in the triangular pediment, is some pretty carving of figure and ornament. Next to it the Leeds Joint Stock Bank shows a classic front of the old school, though a comparatively new building; coupled granite columns on either side of the door with entablature and pediment over; the design of the large doorway between is extended, by means of a decorative heading over it, so as to pretty well fill up the space between the columns. This

Fig. 8.—Entrance to Warehouse, Wellington-street.

is an academic design, but graceful and complete in itself. The Midland Bank, next to it, is a much begrimed stone building of Gothic character, with floral capitals and great lumps of carved foliage projecting on the arris of the arches, looking as if they would be easily broken off; a bad design, and coarse in detail. Beckett's Bank, a little way above, is a work of Scott's, and a fine and impressive building from its large scale and simplicity of conception; it is in Italian Gothic style, with windows with contrasted voussoirs and granite shafts, inserted in the midst of a plain expanse of excellent solid brickwork, with a square porch projecting in the centre, the big trefoil-headed doorway of which is rather out of scale with the rest of the detail. The window-frames are treated, in the heads, in the likeness of geometrical tracery, rather spoiled by the tinsel effect of bits of gilding with which they are garnished; but as a whole this is a dignified and meritorious building. It is seen on the right in the view up Park-row which is appended (fig. 2), and which gives a good idea of the general aspect of the street, though the Roman Catholic church whose tower ends the vista exaggerates the scale in the view, as it is really a poor affair of very mean dimensions. The Royal Insurance Offices, next above, is a stone front in Mr. Waterhouse's early manner, with piers to the ground-floor windows in that Early Gothic section of two nook shafts and a projecting shaft between, such as were figured and measured in so many a student's sketchbook during the ages of faith of the Gothic revival; the treatment of the windows is happily varied on each story. Next to this the Sun Fire Office, by Mr. Corson, another of the older stone fronts, is a round-arched Gothic building of very symmetrical and balanced design; two large round-headed windows in the centre of the ground floor, with a door at each side, and a projecting oriel over each door carried up above the roof, and terminating the elevation on each side; it is a little naïve, but a pleasing front nevertheless. Higher up, Mr. Waterhouse's large front to the Prudential Assurance buildings strikes an entirely new note; one the modern style of fronts highly elaborated in terra-cotta detail, and very picturesque as a whole. The most marked feature in it is the balcony at first floor level with a balustrading formed of the title of the building in large openwork letters, and carried on very large ogee consoles or brackets rising from the ground level; these are each divided into two slices, as it were, to allow the down-spout to come through, an ingenious device which however rather spoils the effect. The front is symmetrical in design, except that the space over the door on the right is treated separately and crowned with a turret. Mr. Corson's classic front to the Scottish Widows' Fund, next to it, forms a curious contrast, with its perfectly plain and orderly classic symmetry, with a porch on each side on coupled granite columns with Corinthian capitals. The manner in which the cornice returns round and buts against Mr. Waterhouse's front, right into the jamb of the windows, illustrates one of the difficulties in "joining" street architectural designs referred to in the paper at the Architectural Association printed last week.

On the opposite side of Park-row the upper corner is occupied by the large stone mass of the Bank of England, once what would be called a "handsome building," now dingy and forlorn-looking; a piece of tame correct Italian architecture devoid of character and originality. The front returns into South Parade, where is the entrance, and where, next to the bank, is the Conservative Club (Messrs. Dobson & Chorley), another of the old school of stone classic fronts, and which truly answers to its name, for a more conservative piece of architecture it would be impossible to find; in this respect the architectural treatment of the Conservative and Liberals clubs seems rather amusingly appropriate. We may diverge for the moment to the end of South Parade to notice Mr. Hill's Poor Law Offices, one of the older buildings, at the angle of South Parade and East Parade—an Italian design in brick with "architectural features" in stone, and noteworthy for a general look of good proportion and a certain originality of treatment; the ground-floor windows have cornices with consoles in the orthodox manner, with a semicircular panel filled with carved ornament over each, except where these panels are pierced as windows (looking like a diminutive mezzanine); an uninterrupted row of plain round-headed windows in the upper story gives continuity and binds the whole together; a pleasing and well-treated building in an old-fashioned style. Opposite the Conservative Club Messrs. Lockwood & Mawson's Victoria Chambers shows some pleasing originality, in a quiet way, in the decorative application of stone pilasters to a brick building. Returning to Park-row, we come next on Mr. Waterhouse's half-finished bank, of which we give an illustration (see plate). This has the great merit of looking exactly like a bank and nothing else, from the characteristic treatment of the ground story, and perhaps it is none the worse for showing greater simplicity of detail and more of unadorned wall than the rather exuberant detail of the Prudential Assurance buildings. The granite columns carrying the porch look rather thin, and the treatment of the porch roof as a segment of a circle inside and out, a stone roof of uniform thickness, which is rather a recent fashion, appears to us in this case too light a treatment for the building, and makes the porch too much of a separate addition instead of an integral portion of the building. However, this bank will be an important addition to the architectural scenery of Park-row. The Museum, which stands a little below this, is an interesting relic of its age, and represents that exceedingly cold, correct, and almost featureless stone classic architecture which about the beginning of the century was the recognised kind of architectural expression for an Athenæum, Museum, Lyceum, or anything else in *cum*. Of the York City and County Bank (Messrs. Smith & Tweedale) we are able by their kindness to give an excellent illustration, which however makes one regret that the building is not quite as good as the illustration; the columns of the order, in the actual building, are a great deal too high and narrow in proportion, leaving one in doubt whether the architects recognised this

Fig. 9.

afterwards and corrected it in the drawing, or whether the upper stories had to be raised in height after the building was half up, and the columns lengthened in consequence; it almost has that appearance; anyhow, the result is that the building is rather disappointing in comparison with the drawing. The Lancashire Insurance Building calls for no special remark; below it is a small front in Italian Gothic style, which looks like another specimen of the hand of Scott.

The reader will conclude, from the foregoing description, that Park-row, taken as a whole, is in an architectural sense no ordinary street; in fact it is not often that one meets with a modern city street which can show so large a proportion of buildings that are worth notice. Going northward from Park-row we come on the Mechanics' Institute by Brodrick (see plate), a building which looks curiously as if it had come out of a French architectural journal, or like an École des Beaux-Arts prize design; a long low frontage with a battering rusticated plinth, over which is a row of segmental-headed windows with a circular tympanum fitted with a shell ornament over each; above this a mass of nearly blank wall and a cornice. The entrance forms a central feature with a mansard roof pavilion over it. The whole thing is a most artificial and academic design, but it shows that its architect was a man with a power of originating design of this class. The worst point in it is the large iron scroll balustrades to the lower part of the windows, which are too coarse in detail and lower the scale of the design. Behind this building the Leeds School of Science and Technology is a plain erection with brick pilasters, uninteresting but with nothing to complain of in it otherwise, and on the other side of the same street towers an enormous block of building which looks like a huge warehouse or mill, treated with immense stone pilasters with windows grouped between them, and a two-story attic over the cornice. It is in fact an education mill—to wit, the "Central Higher Grade School." It is a pity that State education should be connected with buildings of such deadening and repelling exterior; it is worse than a French "Lycée," being as dull and prison-like, and more pretentious. The upper story of the attic, with open ironwork filling between the piers, suggests that a use is made of the flat roof, which is a redeeming practical point.

Near the Mechanics' Institute the front of the Turkish and Swimming baths might be passed without comment, but for the fact that the swimming bath is notified by a life-size stone figure, under a canopy, representing a young woman in the attitude of preparing for a dive; the *motif* of the figure is a common one enough, but it is a bit of sculpture expressive of the object of the building, and as such certainly better than gargoyles. A little higher up, the Coliseum, a concert-hall, by Mr. Bakewell, presents a large flat stone Gothic front with a gable between wide flat buttresses which are stopped on corbels before reaching the ground; between these a large pointed wall-arch occupies the greater part of the height, enclosing the entrance door and a wheel window; the remainder of the front wants motive, the windows being merely pierced in the walls. Above this the Leeds College of Music shows a quiet one-story front formed by a succession of three symmetrically treated gables on each side of a raised centre with a pyramidal roof.

Diverging westward, we pass the front of the Infirmary, a building which is *passé* now both in regard to architecture and plan, but it was a spirited attempt on the part of Scott to fit his beloved Gothic to the uses of an Infirmary. Mr. Corson, in his additions on the east side, has preserved Scott's architectural treatment, with the exception of the open arcaded balustrades. Round to the west of the Infirmary Mr. Thorp's Medical School, a building in late Gothic style, in brick with stone dressings, is one of the most pleasing recent buildings in Leeds. The drawing by which it was illustrated in the *Builder* of July 8, 1893, made for the architect and lent to us by him, does not do it justice; the detail and the general effect are much more refined than appeared from that drawing, and this is the more noticeable because in general we think the tendency of modern architecture in Leeds is towards over-pronounced and rather too assertive detail. In the Medical School everything is quiet and restrained, but not without picturesque quality.

Mr. Waterhouse's Yorkshire College, further out in the same direction, is a very large assemblage of buildings, a *groupe scolaire*, in the French phrase, of which we give an illustration (see plate) of the central and latest block. The whole building illustrates in rather an interesting manner the successive changes in its architect's style of design. Of the three main blocks towards the front, we prefer the right hand or "middle period" one, in which the treatment is more simple and broad and more decisively Gothic in character. The centre block, shown in the illustration, includes on its upper floor the large examination-hall, the end window of which appears in the drawing. The plain low building which has been inserted as an intercommunication corridor between the old and new blocks of building expresses its purpose very well, and forms an agreeable incident in the architectural grouping. The internal corridors of the building seem too narrow, and are insufficiently lighted in some parts.

Coming down to the lower part of the town, near the market (the Kirkgate Market is a poor and crowded affair, and suggests that it is time a new market were built) we find in the Corn Exchange (see the plate of "various buildings") another example of Broderick's originality of treatment. The use of stone work in facetted squares all over the wall surface — a form of rustication — seems rather a coarse expedient for producing surface; but nevertheless this circular building is a bold conception, and serves to confirm the impression that Broderick, although his style of work was not altogether what one sympathises with now, was no common architect, but one who had his own original ideas and

his own way of doing things. No one of his three buildings which we have specially mentioned—the Town Hall, the Mechanics' Institute, and the Corn Exchange, would perhaps separately produce this impression; but taken all together they certainly do.

As in Manchester, large warehouses for commercial storage (in this case cloth warehouses) form an element in the architecture; and we were warned to look at Barran's warehouse, in Park-square, as a typical example. It is a spirited effort to treat a warehouse in a striking and picturesque manner, but it is a little overdone. It is an immense quadrangular block treated in a Venetian manner, with a large balustrade at the top in a series of ogee gablets with foiled circular openings under them, the octagonal buttresses at the angles terminating in turrets or pinnacles of rather exaggerated character. The best bit of detail in it is the design of the railing and piers round the building. However, though the taste of the whole is not unimpeachable, it is a striking and effective building of its class. Its architect, Mr. Ambler, has adopted a more restrained style in another large warehouse at the other side of Park-square, which is in better taste, though it has hardly so much special effect about it as the other. Fig. 8 shows a doorway of another warehouse, by Mr. Corson; a rather characteristic example.

Among the recent buildings in the central portion of the town Messrs. Chorley & Connon's offices of the *Yorkshire Post* (fig. 4), of which we give an illustration, is a building at once picturesque in line and grouping and simple and solid in style; and we give a sketch of a portion of the building or group of buildings called St. James's Hall, an addition by Mr. Thorp (fig. 9), which is an effective bit of building, though the gargoyle has had rather too much of his own way here. The short street called Albion-place presents a curious architectural mixture; at one end a pure Greek building, with a Corinthian order flanking what under some other use of the building was the main entrance, but is now a warehouse door; opposite to this is a quiet old Georgian brick office; at the other end of the street the Church Institute, a respectable brick Gothic building of the revival.

Examples of shop architecture in Leeds are shown in fig. 5, a shop-front in Commercial-street by Mr. Corson, and a shop-front in Briggate (fig. 6); one of the few bits of characteristic architecture in the street. We add also a drawing of the street front of the Theatre in Briggate, by Mr. Corson (fig. 7).

Leeds is not well off for churches. The largest, St. Peter's, built in the early days of the Gothic revival (about 1840) by Mr. R. D. Chantrell, of Leeds, is a very good specimen of revived Gothic for that early period; it is, however, as may be supposed, mere revival, with no original feeling about it. The late Classic churches are not much to boast of, they are cold and uninteresting buildings and their steeples are poor. The interior of Holy Trinity Church is an example of a very simple Classic treatment, being divided into three aisles by columns rising nearly the whole height of the interior, carrying a long soffit or architrave running parallel with the walls. The finest old work to be seen in Leeds is the late Jacobean woodwork of St. John's, near Briggate. This is a two-aisled late Gothic church with an arcade up the centre, much restored and patched externally; but the chancel screen and the carved bench ends are exceedingly fine work of their type, and the church should not be forgotten by any one visiting Leeds.

Out at Headingly, a suburb approached by a picturesque road, is Mr. Pearson's fine stone church, the interior treated with what may be called stone principals, solid arches across nave and aisles, those across the nave being terminated level about half way up the roof, the roof timbers resting on the stonework; this treatment gives a very monumental look to the interior. We heard of, but did not see, what is said to be a very successful church at Armley, St. Bartholomew's, by Messrs. Walker & Athron. Near Headingley is also the Wesleyan College, with a heavy Moresque looking pointed stone cupola, on an open colonnade, as the central feature. In one of the new roads, Shire Oak-road, at Headingley, are some good examples of dwelling houses, one or two of which we may have an opportunity of illustrating. Within the town too, on the tram-route out to Headingley, is to be noticed the Leeds Girls' High School, a very quiet old Georgian brick building, "plain in its neatness," and interesting as an example of the taste of its day.

Roundhay Park, in the opposite direction from Headingley, was laid out some fifteen to twenty years ago as a residential park, and the houses there appear to be built with a certain regard to architectural style, brick with more or less half-timber work appearing to be the favoured treatment. The place still looks rather raw; it takes what photographers call a "long exposure" for a new park to assume an air of natural ground, and for those who have to go to and from their residences here to business the road out to it must be the reverse of attractive. The steam tram, a flourishing institution in Leeds, makes short work of it; but the tram is unfortunately as ugly as the road it runs along.*

NOTES.

Peterborough Cathedral.

THE Society of Antiquaries held a special meeting on the 15th to consider this subject, when the following resolution was passed:—

"That the Dean and Chapter of Peterborough be requested to leave the west front of the cathedral church as it stands for the present, until a detailed specification can be prepared for the Society of Antiquaries of the manner in which the repair of the north gable can be carried out, so that the architect of the Dean and Chapter may be fully cognisant of the method proposed, and may, should he think it desirable, call in the advice of some competent engineer as to the feasibility of the scheme, in the same manner as the Society of Antiquaries also proposes to submit it for an engineer's opinion.

In case of such opinion being favourable, it is intended by the Council to offer to repair the north gable without expense to the Dean and Chapter."

After the offer contained in the closing sentence, it may be said that this proposal ought to be seriously considered, and every one must appreciate highly the public spirit shown by the Society of Antiquaries in endeavouring to secure the preservation of the outward aspect of the front untouched. This does not however alter our opinion that the interior condition of the piers, which is not known, is the main point, and that it is absurd to talk of rebuilding on them and trusting to the chance of their being in a condition to stand for an unlimited time. Our strong conviction is that the whole thing will require rebuilding to render it permanently secure, and that if this is not done now it will have to be done at some future not very distant date, when possibly the same care will not be taken to preserve the old work which would be taken now.

* The next of this series of articles, on the architecture of Bristol, will appear in our issue of January 30.

Lord Leighton's Drawings.

THE Exhibition of Lord Leighton's drawings at the Fine Art Society's Gallery does not fall short of the interest which we predicted for it, and exhibits in a remarkable degree the delicacy of his hand and eye in drawing, and the care which he gave to the preparation of his works. The drawings are arranged in an approximate chronological order, which of course adds to their interest for study, and it appears to us that the earlier drawings are in some respects the finest; they have less breadth and force, but are more delicate and finished; probably more time was available for them. As an example of fine drawing the "Study of Hands" (11) is one of the most beautiful, and architects will take special pleasure in the exquisite manner in which carved detail is shown in the "Drawing of a Well" (17). The celebrated "Lemon Tree" drawing is unfortunately not here, but there are smaller foliage studies, some of which, for instance the "Study of a Thistle" (26), are equal to it as far as they go. Among the later drawings studies of drapery take a considerable place, and show the importance which Lord Leighton attached to the design of drapery. It is interesting to see how many experiments were made with the nude studies for "Flaming June," where the figure has been tried in various poses. The attitude of the figure was much criticised when the picture appeared. The studies show that it is what may be called a possible but not a probable attitude.

Some Stained Glass Work.

SOME interesting designs in stained glass, both in cartoons and executed works, have been on view at Mr. Christopher Whall's studio in the Vauxhall Bridge-road, which bear witness to this artist's satisfactory and somewhat novel treatment of glass. One example is a four-light window for Falkirk Parish Church, in which two subjects are treated: one represents "the Love of God," illustrated by stories of Abel, Abraham, Moses, and David; and the other "the Love of our Neighbour," illustrated by that of the Good Samaritan. The colouring and form, as in all Mr. Whall's work, is very satisfactory, the chief point being the careful selection from a number of stocks of glass, and the use of metals quite unusual in this kind of work. The treatment of high lights is made much use of, the result being a kind of sparkle, quite proper in the treatment of glass as differing from opaque substances. From silvery whites to richest peacock blues and golden pinks, the gradation is carefully and judiciously contrasted, and Mr. Prior's Early English glass is also used. Mr. Whall's satisfactory distribution of colour is, perhaps, more easily assured by his system of roughly building up his subject by a sketch treatment of actual pieces of glass, and his careful selection of material.

Addington, Surrey.

IT is proposed to restore the chancel of the parish church as a local memorial to the late Archbishop of Canterbury. The church, partly rebuilt *temp.* Edward III., was repaired in 1773 by Alderman Trecothick, who built the manor house near the site of the earlier one (1403) on Castle Hill; by Archbishop Howley in 1843; and, after Mr. P. St. Aubyn's designs, in 1876, when a vestry and north aisle were added. Barlow Trecothick bought the manor, known as Aguillon's or Bardolph's, in 1767, when was still standing at Castle Hill the house for the fortifying and embattling of which Sir Robert Aguillon had obtained a patent in 54 Hen. III. In 1808 Archbishop Manners Sutton purchased the property. Dr. Howley, who shared his predecessor Morton's taste for building, made many additions to the house, and beautified the park. At the time of Domesday Survey the manor was held by Tecelin, William I.'s cook, and afterwards with service of presenting to the King, at his coronation feast, a dish of gyron, or pottage; the custom was observed, we believe, as late as the coronation of George III. In the church are memorials to Trecothick and Archbishops Sutton and Sumner, and Archbishop Howley's altar-tomb. Dr. Longley was buried in the churchyard; also Archbishop Tait with his wife and son.

A Court for Trial of Patent Cases.

SOME public attention has been directed to the fact that Mr. Justice Romer has been engaged almost for the whole of the Michaelmas Law Sittings in the trial of questions relating to the infringement of patents. This appears to show not that there should be more division of these cases among the different Judges of the Chancery Division, but that one Judge should be appointed entirely for the trial of patent cases. If he had time to spare over and above this particular work he could assist the Judges in other business. But the modern tendency towards specialisation of work makes it desirable that a Judge who is brought into daily contact with this particular class of litigation should have the entire control of the work. The more that special legal business is assigned to particular judges the quicker and the more satisfactorily will the business of the court be disposed of.

Telegraphy without Wires.

SIGNOR MARCONI is lucky in having such an enthusiastic supporter as Mr. Preece, the electrician to the Post Office. In lecturing at Toynbee Hall on Saturday, Mr. Preece exhibited a model of the apparatus. It consisted of what looked like two ordinary boxes, and, no matter where they were placed, on turning a switch in the one a bell rang in the other. Of course, this is not a very difficult experiment for electricians to repeat, and until we know what is inside the boxes we cannot judge of the merits of the invention. The lecturer said that the Post Office had decided to spare no expense in experimenting with the apparatus. We presume, therefore, that they will take expert advice, as naturally the Post Office telegraphists have very little experience with Hertzian vibrations, and the advanced mathematical theory seems to be a sealed book to the Department. Mr. Oliver Heaviside's advice would probably save thousands of pounds by avoiding the necessity of costly experiments in many cases. It would also be hardly fair to pass over Professor Lodge, who has experimented so largely and so well, and, we may add, so cheaply, on these vibrations, and whose work is known and appreciated all over the world.

Bacteriological Purification of Sewage.

WE have received a copy of a paper on this subject by Mr. Samuel Rideal, D.Sc., read before the Sanitary Institute on the 9th inst. The paper is principally devoted to a consideration of Mr. Cameron's work at Exeter. As we have already described this process, we need only repeat that the sewage is first passed slowly through a closed underground tank, and subsequently through ordinary filter-beds—nothing more. A certain amount of sedimentation takes place in the tank, but its main function "is one of hydrolysis, in which chemical changes are effected by means of organisms or their enzymes, without the aid of oxygen," a process accompanied by an increase of free ammonia and carbonic acid in the sewage. In the filters, however, the now well-known process of nitrification is effected by organisms in the presence of free oxygen. Dr. Rideal's general deductions are that "the septic tank seems . . . . to effect as much purification as an average chemical precipitation process, or as slow upward filtration," and that "the filter-beds effect a considerable reduction in the organic matter, ... the removal of a large percentage of the free ammonia, and the production of abundance of oxidised nitrogen in the form of nitrate." We cannot enter more fully into the details of the Exeter experiments, but readers interested in this important subject will be amply repaid by a perusal of Dr. Rideal's important paper. To architects—who are, of course, mainly concerned with the disposal of the sewage of isolated buildings—the chief point of interest is the strange revival of their old friend the cesspool, but under a new name. The cesspool of our fathers is the "septic tank" of to-day, while the modern filter is merely an artificial equivalent of their garden or field.

Offensive Trades.

DR. ORME DUDFIELD in his last four-weekly report on the sanitary condition of Kensington, goes at considerable length into the question of the nuisance arising from the class of business called "Marine Stores," which appears to include the collection and storage of articles which are liable to become, and do become, a nuisance to the neighbourhood. The Sanitary Committee of the Kensington Vestry have been considering the matter, and are of opinion that questions of this kind would be likely to be more easily and summarily dealt with if, after the London County Council had supplied powers in the form of a by-law, the carrying out of the by-law were left in the hands of the Local Authorities. The Sanitary Committee of Kensington have accordingly passed the following resolution:—

"OFFENSIVE BUSINESSES.—That the powers of the Council under Section 19 of the Public Health (London) Act, 1891, to declare a business to be an offensive business, should be transferred to the Local Authorities."

The feeling of the Sanitary Committee appears to be that the London County Council, which could easily remodel a by-law so as to include a special trade under the head of "offensive" trades, is averse to passing any modification of its by-laws of this class which would involve an increase in the number of inspecting officers, at all events without very strong evidence of its necessity. It is urged by the Kensington Committee that the Local Authorities, if they were given the necessary powers, could easily arrange for the inspection, without throwing any further burden on the County Council. The Kensington Committee are now waiting to see what the effect of this resolution may be.

Efficient Dynamos.

As a piece of mechanism, large dynamos are known to be extraordinarily efficient. Messrs. Siemens Bros. & Co. have lately supplied two large continuous current dynamos, weighing over twenty tons, and of about 700 horse-power each, to the Bradford Electricity Works. As the two dynamos are exactly similar it was possible to test their efficiencies accurately by Dr. Hopkinson's method. It was found that at quarter load their efficiency was over 90 per cent., at half load it was 94 per cent., and at full load it was over 95 per cent. Each dynamo is driven direct from a Willans's engine, so that there is no loss of power from gearing. It will be seen that there is not much room for improvement in the efficiency of the conversion of heat into electrical energy at the dynamo end of these self-contained sets. In order to make electric energy cheaper, we must be able to get mechanical power more cheaply. Judging from the present state of electrical knowledge, there does not seem to be the slightest chance of our being able to obtain electrical energy more economically either directly from heat, or indirectly, as in all chemical methods.

Railway Refreshment Rooms.

No feature of the streets of London has lately become more marked than the multiplication of the rooms of the Aërated Bread Company, and in a more modest way, and for a lower strata of customers, of those of Lockhart's, Limited, and which, we believe, are sometimes called "cocoa rooms." Those who by habit are accustomed to see these places every day of their lives perhaps hardly realise what their establishment means in regard to the social habits of the people. If we take Lockhart's rooms, for example, they are absolutely opposed in principle to public-houses, and they have achieved a commercial success, which will, no doubt, increase. They are standing indications of the growth of thrift and sobriety among working men. What we more particularly desire to suggest is that each of these companies should be allowed by the Boards of the great railway companies to have establishments either in, or in close proximity to, the great railway termini. At present the railway traveller is worse off in regard to good fare at moderate charges than any other person, and it would be a great step in advance if these refreshment companies could be brought into connexion with the railway termini. A Lockhart room at every station would be an immense boon to the employés.

CONSERVATIVE CLUB, BRADFORD.—The foundation stone has just been laid of a new Conservative Club, which is to be erected in the eastern division of Bradford. The club now about to be built is from designs prepared by Mr. Frederick Wild, architect, of Bradford.

STUDENTS' WORK AT THE ROYAL ACADEMY.

OWING to its being one of the intermediate years, when no gold medals or foreign studentships are offered, this exhibition is deprived of some of the interest which it has on the alternate occasions. The chief architectural prize of the year is the English travelling studentship, but it has brought out only two competitors, neither of whom has succeeded in producing a design which the judges considered worthy. It makes one melancholy to notice how poorly the higher architectural prizes at the Academy are often competed for: it does not say much for the energy and perseverance of the students that so few emerge from the grub and chrysalis stages of the lower and upper schools into the butterfly existence of a competitor for a studentship or a medal.

We do not know that one can seriously quarrel with the decision with regard to the travelling studentship, the subject of which was "A Club of Arts and Letters." It is true that No. 213 is treated in a broad and dignified manner eminently suitable to a club, and that there is not much externally with which one can find fault, unless it be the narrow and inadequate entrance, flanked by poorly-drawn winged lions, and perhaps the little Doric-column balusters which might offend purists. The plans do nothing, however, to support the rather negative excellence of the elevations; the library occupies the front of the first floor, a noisy position, and is nearly fifty per cent. larger than the dining-room, which is placed at the back overlooking a courtyard; perhaps the author, in the innocence of his heart, supposes that members of a club of arts and letters regard dining as a penance; the positions of the smoking room and cloak room are also bad. The plans of No. 214 are better, though he also puts his library in front, overlooking the street; but the architecture is commonplace, not to use any harder word. The first and second silver medals for drawings of Waterloo Bridge have been awarded to Messrs. H. C. Hide and Francis Hatch, respectively. We believe this is the first occasion upon which the competitors for the drawing medals have been required to use geometrical cast shadows; probably they have been surprised to find how simple a matter it is; except in one instance, they have certainly done it very well for a first experiment. There is not much to choose between the two prize sets; Mr. Hide's, however, are a little the cleaner and sharper, Mr. Hatch having apparently used his india-rubber rather freely, and the tinting is rather better done. No. 215 is hardly inferior, but it is a pity to use an ugly colour like Paynes grey for shading when good indian-ink is available.

The upper school prize has gone to the only design possible, a clock tower by Mr. John Anderson. It is Renaissance in character, very simple in the lower part, with rich clock and belfry stages, and a lantern which is the only weak part of the design. Several other competitors have submitted their versions of the same subject, but they are simply ugly, the only good point about them being that the diagonal elevations, or at any rate outlines, have been considered as well as the front. The lower school studies are better as a collection; the prize is taken by Mr. A. H. Christie for a quiet and homely-looking country house in stone, broadly designed without fuss or fritter, and fairly well planned. No. 235, the front of a town house in the style of Wren, is, we think, equally good of its kind, and several others only escape excellence by a little. The planning prize, subject a concert hall, has attracted three competitors, who have treated the site in three very different ways. Mr. Weald's plan, which provides the required accommodation on two levels only, has been considered the best, and seems to propose the most straightforward and sensible solution of the problem. Whether it is wise to encourage a study of planning apart from the other aspects of a building is a question: we do not think it is, and should feel better satisfied if we could see how the plan would work; why should not an outline section be added to show that the competitor understands what his plan really means.

Of the prizes for painters the most important this year was the Creswick prize for landscape. The subject set was "A Farm," and proved so attractive that the pictures submitted made a continuous line all round the large room. Unfortunately the skill was hardly equal to the energy displayed. Whether it is that the limit now put to the age of students, or at any rate to the age at which they may enter the schools, is responsible for the falling off in the quality of the work sent up for medals and prizes, or whether something else is responsible, it is certain that an unusual number of prizes went unawarded this year, and that in several of the competitions, as in this one, the general level of excellence was low.

Mr. E. F. Wells's picture took the prize with ease, no other competitor can be supposed to have been near it. His "Farm" is a substantial steading of grey stone with old tile roofs, standing on an open heath near the sea, of which there is a glimpse in the distance; a small group of figures serve to give a centre of life and interest to the picture, while a pond and some white ducks are valuable in the foreground, and echo the gleam on the distant water.

The sketches for the Armitage prizes are hung on a screen in the same room as the landscapes, and are almost equally numerous. It is always interesting to note what different ideas for a picture are suggested to different minds by the same subject. This year, in "Adam and Eve Driven out of the Garden of Eden," most of the competitors have fixed upon the two figures overcome by grief or terror, but no two give them the same attitudes or grouping; a good many make the angel the chief feature and the flaming sword conspicuous; a few, very few, try to convey the idea of a garden, and that unsuccessfully. The suggestion of being driven out is conveyed by a good many, and, among others, by Mr. A. D. Davidson, who takes the first prize for a composition in which the great wing of the archangel is made to form a dark background to show up the smaller figures flying towards the spectator; it is a strong sketch, restrained and dignified, and worthy of the subject. Miss M. M. Wear's sketch, to which the second prize is given, expresses the sadness rather than the awful nature of the occasion; her figures are in profile and the angel only of life-size, and rather an ethereal being.

The prize for decorative painting seems to grow steadily in popularity, and one now often finds a picture which has something of the simplicity and surface necessary to make it decorative. There are two such this year, the prize design by Miss R. Livesay, and one on the centre of the wall directly opposite. The subject is "Winter," but would be a little difficult to divine in most cases if one were not told. In Miss Livesay's composition the colours are well massed together, but the figures and contours are heavily outlined, which seems unnecessary, and gives the picture a stained-glass effect. If the expression of the face and hands of the main figure in the other design were less extravagantly theatrical we should certainly prefer it; here, too, the colours are well massed and harmonious, the surface well kept, and the whole large and simple. The two prize "models of a design," subject "Charity," are of very equal merit, and a long way in advance of the works of other competitors. The head of Mr. A. B. Pegram's "Charity" (second prize) is a finer piece of work than anything in Mr. Alfred Turner's (first prize), but the modelling falls away in the lower part, and in the male figure, while Mr. Turner's is not only more satisfactory as a group, but is of fairly equal merit in detail throughout. Mr. Pegram, however, secures the first place for his model in low relief of "Neptune and Tritons," a design supposed to contain ornament as well as figures, though the ornament is confined to some dolphin's tails. It is a well-modelled piece of work, and the space is satisfactorily filled, but it would probably gain as decoration if it had some more emphatic leading lines or masses. The other competitions are of less interest; the cartoons of a draped figure are the least so we ever remember to have seen at the Academy, and there is nothing exceptionally noteworthy among the paintings and drawings from the life, unless it be that among the dozen or more paintings of a "draped figure," about three-quarters have no drapery beyond a loin cloth.

WATERWORKS, HEYWOOD, LANCASHIRE.—A Local Government Board inquiry was held on the 10th inst. at Heywood by Colonel Cope, C.E., into the application of the Heywood Town Council for permission to borrow 35,000*l.* for waterworks purposes, and 1,000*l.* for the purchase of a new steam fire engine. The Heywood Town Council supplies Middleton, Norden, and parts of Castleton, Chadderton, and other places with water. The application was largely to obtain money to pay for new mains, which will enable the Corporation to give a better supply to Middleton, and to carry out other works. Evidence in support of the application was given by Mr. James Diggle, C.E., Borough Engineer for Heywood.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS:

BRICKWORK TESTS.

A MEETING of this Institute was held on Monday evening at 9, Conduit-street, W., Professor Aitchison, A.R.A., the President, in the chair.

The Hon. Sec. (Mr. W. Emerson), announced that Mr. John Mossop, who ceased to be a member in 1891, had been reinstated an Associate by the Council, in accordance with By-law 20.

The President then called upon Mr. W. C. Street to present an interim report of the Science Committee on the tests of brickwork conducted by that body.

Mr. Street then read the report on the second series of brickwork tests. Owing to the unsatisfactory manner in which some of the piers experimented upon in December, 1895, had been built, duplicates were determined upon, and these were the piers first operated upon in June. They were built in March, and were numbered 11a, 11a, 12a, 14a, 15a, and 16a, replacing the same numbers in the first series; and in finally dealing with the results of the experiments these piers would be inserted in the place of the originals. After crushing these piers there remained the second eight built in lime mortar, and the second eight built in cement mortar, which were, in June, ten months old. When these had been crushed, a pier was built, at the suggestion of Professor Unwin, of bricks laid in sand, and experimented upon in the same way as the others. Mr. Street then described the manner in which the work in the experiments had been distributed among the different members. The Committee were proceeding with a third series of experiments — namely, upon short lengths of walls built without closers, and of a more perfect bond than could be obtained with piers 18 in. square. When these further experiments were complete they would be ready to make a final report upon the whole series, and in which they expected to be able to establish reliable rules as to the safe loads for the various kinds of brickwork with which we have been dealing. It was interesting, meantime, to note the great difference between the strength of bricks and of brickwork, the enormous disproportion being due to the quality of the material interwoven with the bricks as a means of uniting and holding the mass together. The effect upon different kinds of bricks was variable, owing to some bricks being more susceptible to adhesion than others. Again, if the mortar was imperfectly mixed, or the joints and beds of the brickwork imperfectly filled up, the injurious effect on strength was incalculable. It introduced unequal pressures in different parts of the body, and the work failed in detail until so much was destroyed that the remainder suddenly collapsed.

The views of the different piers under test were then exhibited by the lantern, and Mr. Max Clarke described some of the phenomena presented in the process of crushing these piers.

[The real practical value of the Report lies in the tables of results, which will be found in the Institute "Journal."]

Several of the photographs of the brick piers which had been taken were then thrown upon the screen with the aid of a lantern, and were explained by Mr. Max Clarke.

Professor Unwin said he believed he was expected, first, to say a word or two about two appendices which he had put to the account of these experiments. To one he need hardly allude at all, namely, the account of the further testing in order to determine the friction of the press during the second series of experiments. The only thing which needed to be said was that the press had improved by a slight amount in the interval between the two series, so that in the second series the friction was a little less. He had also given some tests of the new bricks used in the construction of some of the later piers still to be tested; also, the completion, to a certain extent, of the tests previously begun—and of which an account was given in the previous report—on the lime and cement mortar used in building the piers. During the tests it occurred to him to put forward a small experimental research which he had commenced on the resistance of crushing. In ordinary tension tests of a bar it was almost universally assumed that the tenacity of the bar, the resistance per square inch, was practically independent of the form of the test bar. They now knew that was not quite true, and that it was only on similar bars that they got exactly the same tenacity. The crushing resistance depended much more on the form of the

specimen crushed. A common assumption was that they might take a cube, a rectangle, and a cylinder, and, crushing them, compare the crushing resistance; but that was, to a certain extent, a mistaken notion. The results of early French experiments had shown that the crushing resistance depended on the form of the specimen crushed. The difficulty was that they had to find a material of a very homogeneous and uniform quality, so that there were no discrepancies in the quality of the material as well as variations due to the form. In the course of these tests it occurred to him that ordinary red rubber brick was a uniform kind of stuff, and was not difficult to cut up into shapes. He carried out a series of tests on blocks of such bricks in order to see the influence of form on the crushing resistance. He would show how considerable that might be. He had a table of some prisms of red rubber brick—exactly the same material—which were square in section and of different heights. When they were 1 in. in height they carried 125 tons per square foot before they crushed; when 2 in. they only carried 87 tons, and when 4 in. in height only 75 tons. That was not a case where bending came in; there was no bending to affect the thing. The cause was a different one. It would be seen that in quite short prisms 4 in. high, the form of the specimen had a very large influence on the crushing resistance. The prisms were respectively 2 in. square and 1 in. high, 2 in. square and 2 in. high, and 2 in. square and 4 in. high. The first was thus less in height than width, the second the same in height as width, while the height of the third was double its width. Then he tried with a whole and half brick; the half-brick was weaker than a whole one by 8½ per cent. This showed that in considering crushing tests, the question of form came in as well as material. He also wished to say a word or two about the results which had been obtained in the tests made by the Science Committee. He had looked carefully over the results obtained in the last series, and compared them with those obtained in the previous series. Now, the tests as a whole were not completed, but those of square piers were. The further tests to be made had reference to piers of a different form. He would not refer to those, but would only call attention to points in connection with the completed tests. Looking at the results he found two great anomalies. In the first place, there were a few piers which were built at a later date than some of the others. They were built with different lime, cement, and sand, and under conditions of very much greater care. If a comparison were made it would be found that the piers built at a later date invariably carried more than the piers built at an earlier date—generally twice as much. Taking a single instance, let them compare the gault piers of about three months old. The first built piers carried only 18 tons per square foot, and those of a later date carried 49. Taking the Leicester red piers, those built at an early date carried 58, and those built at a later date, 86 tons per square foot. Taking the Staffordshire blue, those built at an early date carried 72 tons, and those at a later date carried 101 tons per square foot. That was an anomaly which required some explanation, and to the interpretation of that some importance was to be attached. Now, Mr. Max Clarke had laid stress on the fact that very much more care was taken in building the piers at a later date than those built earlier; and they had there a lesson as to the necessity of carefully superintending the work of building. But there was another cause of the discrepancy, viz., the change in the materials of the mortar, and he was very much inclined to think that nearly the whole of the difference was due to the varying quality of the sand used in making the mortar. His tests on the mortar were not yet complete, but from what he had seen of cubes made with the same care, but with different qualities of sand, the results varied with those cubes just as they did with the piers. This, he thought, would prove to be the result, to a certain extent, of a difference in the quality of the cement and lime, but chiefly the difference in the quality of the sand used in making the mortar. He called attention in the first report to the very bad quality of the sand used. That used in making the last mortar was extremely good, so good that it had given better tests than anything else up to the present, and better even that the standard washed sand with which they had been making comparative tests of cement. His point, therefore, was that it was quite clear the later series of tests must be classified wholly apart from the earlier, and they were different piers and not of the same materials; and then, that probably the main difference was due to the quality of the sand used in making the mortar. The second anomaly in this series of tests was a very curious one, and he could not give any explanation of it. Taking the tests in order it would be found that in by far the larger number of cases—there were eight series altogether, viz., four qualities of bricks in lime and four in cement, making eight comparative tests—in six out of eight of those, the piers built and tested after four or five months carried more than the piers after standing for ten months, which instead of being stronger were weaker. the difference was in the wrong direction; there ought to have been a gain of strength rather than a loss. He would attribute this to the action of frost, only he did not think there was any frost to affect the piers that were built. Those were the two broad anomalies which ran through the whole of the results of the tests. He had now a word to say on a special experiment which he himself proposed, and of which, he dared say, the drift was not quite seen. After the conclusion of the first series of tests, he suggested he would like to see a pier built without any mortar in the joints, and with merely enough sand put in to make a bed for the bricks, and then crushed. The committee were good enough to carry that test out, and he thought the result was very instructive. The sand was dry, and there was no adhesion at all. The experiment having been made, he was told that the pier did not carry anything at all. He was rather disappointed upon hearing that; but when only a day or two ago he saw the actual result, he found that, so far from carrying nothing at all, the pier carried 30 tons before it gave way, and 30 tons was by no means a small load for an 18-in. pier to carry. Further, that pier of Liecester red bricks, built in sand, carried a greater load than the average of the London stocks in lime either at eighteen or forty-three weeks; it carried a load only a few tons less than that carried by the gault bricks in lime either at eighteen or forty-three weeks; it carried just half the load carried by the Leicester red bricks built in lime; it carried a greater load than did the London stocks built with cement, after twenty-one weeks; only a very little less than the gault bricks built with cement, after twenty-one weeks; and about one-third of the Leicester red bricks built with cement, after twenty-one weeks. 13½ tons per square foot was a very considerable load compared with the loads carried by the other piers built with mortar. That experiment showed the result of building a pier without any lateral adhesion of the parts. The pier carried quite as much as he had expected, and did it very creditably. A great deal of importance had been attached in connexion with these experiments to the joint in the piers in which there were some closers. Now there was a pier in sand which was practically all closers; it had no lateral adhesion, and no bond except the mere friction of the brick on the sand. He did not pretend to any infallibility in regard to brickwork, but he did not attach anything like the importance which was attached by some architects to this question of closers. If they had a pier built with mortar so badly that there was no lateral adhesion, it was a very bad thing to have these joints in which they had short closers. If they had good enough mortar, with a good deal of lateral adhesion, he did not think it mattered at all whether they had these closers or not. It was all a question of the quality of the mortar they used.

Mr. H. Dawson said he understood the sand-built pier actually fell away at 15 tons. That was very different to the Leicester reds, which only began to show cracks under a weight of 22 or 23 tons.

Mr. Woodward inquired whether the brickwork was grouted in mortar or cement in these cases. With regard to cohesion, the result of these experiments was something astounding. Was he to understand that, given two piers built at different periods with the same quality of brickwork, the enormous discrepancy shown was due entirely to the joint? Because, if so, the observation made as to the superintendence of the work during its progress became of more than paramount importance.

Mr. W. White, F.S.A., could entirely endorse Professor Unwin's observations as to the necessity of having good sand; the quality of the sand was of the very first importance in brickwork. As to the question of closers, he thought what they had heard that evening emphasised the fact that it was the closers which formed the weak points, and diminished the strength of the piers enormously.

Mr. P. Gordon Smith, Chairman of the Science Committee, remarked that it was very gratifying to that body to find that a provincial society—the Sheffield Society of Architects—had taken a keen interest in these experiments. That Society had asked to be furnished with a set of bricks similar to those which the Committee had experimented upon, and these had been placed in the hands of Prof. Ripper, of Sheffield College, who had tabulated the results of experiments on the strength of those bricks. These results differed a little from their own, though not much; they showed, however, the difference there was between Sheffield and London stock bricks, the former appearing to be very much stronger than the latter. It might interest the members to know how the money raised for the committee's experiments had been spent. They had had some 50 yards of rails and sleepers to construct, along which to move the piers; they had had 15,000 bricks of various sorts, some few yards of lime, 4 tons of Portland cement to purchase, and labour to pay for. The thanks of the Institute were due to Sir William Arrol for the use of his powerful testing-machine; to Professor Unwin, who had been of great assistance, having directed the experiments, and given them excellent advice; to Dr. Longstaff, L.C.C., who had helped them considerably financially; and to Mr. Donaldson, the engineer of the Dock Company, for his great help on the spot. He proposed a vote of thanks to these gentlemen.

Mr. J. Slater said that Mr. Woodward seemed exceedingly disturbed in his mind because the results of the experiments were so very different from what he had expected. That gentleman, however, must remember that this was the first time that experiments of such a nature and on such a scale had been carried out, and it was by no means wonderful if the results showed that the old rule of thumb upon which they had been going in the past was not correct. One of the most interesting conclusions arrived at appeared to be that the form of the compressed surface had a good deal to do with the pressure it would stand. They had always been accustomed to provide a base for a column or a stancheon of a certain thickness, but it now appeared that they probably made a great mistake if they increased beyond a certain point the thickness of a base which was to carry a given weight. Of course there must be a minimum thickness, but it seemed that if they went beyond a certain thickness they increased the liability of the compressed surface to crack; and it had occurred to him that it was possible that the closers having any effect on the piers might be due to the fact that these particular closers were actually considerably higher, compared with their area, than the rest of the bricks. As to the pier built in sand, it seemed to him very extraordinary that that pier, without any mortar or lateral cohesion at all, should not have collapsed until a pressure was brought upon it of 15 tons per square foot. As to the experiments generally, there were certainly enormous discrepancies in the results, and he thought Professor Unwin would agree with him that it would not be wise to calculate too precisely therefrom the weights which piers would carry, but he thought they had at least discovered this, that brickwork in mortar and cement, if properly constructed, would carry a very great deal more than they had previously thought, and it was perfectly certain that an ordinary wall, properly built, would never have to sustain anything like the crushing weight which would cause it to fall, simply from its own structure of brickwork, mortar, cement, &c. He had great pleasure in seconding the vote of thanks.

Mr. Hugh Leonard said that although the results showed great discrepancies, there was no doubt a great deal of useful knowledge could be extracted from them. It was rather a pity that at the outset the first piers were not constructed as carefully as they might have been, a fact that had come as quite a surprise to the Committee. He thought the thanks of the Institute were due to the Sub-committee appointed by the Science Committee for the valuable work they had done, and would suggest that that addition be made to the vote already passed.

Mr. H. Dawson would be sorry if members went away with the idea Mr. Slater had put before them, because his own conclusion was totally different. The experiments, so far as he could see, most distinctly showed that brickwork would not carry much more than half of what they had been accustomed to think. Another point he wished to mention was that the term "London stocks" was a misnomer. There was scarcely such a thing nowadays as a true London stock. Laid in mortar, London stocks, which really came from Kent, would not bear more than about 5 tons to the square foot before they began to crack; at 10 tons the cracking was

serious, and they crushed altogether at about 22 tons. Some years ago he made some experiments, with the result that true London stocks did not crack seriously until a pressure of 26 tons to the square foot was reached, while gault stocks (made then at Ardsley, in Bedfordshire) bore a pressure of 54 tons before cracking seriously. That showed the difference between the real old London stock, which could hardly be obtained now, and those at present called by that name.

Mr. Beresford Pite asked for some further information as to the sand used in the construction of the sand-built pier. Might they hope, he asked, to be delivered from the rule of thumb method of calculating safe loads? He knew this was a very complicated matter, but he would suggest that these experiments were practically useless until they came to some efficient and satisfying rule as to ascertaining what were safe loads, as a result of these experiments.

Mr. Emerson inquired whether the Committee took any note of the difference in the crushing load if they used bricks with frogs or bricks without frogs? He also asked whether the bringing of the weight down comparatively quickly on the piers that had been standing for some months and after all the mortar had set would not cause the pier to crush under a less pressure than if the weight had been gradually piled on while the pier was green?

Mr. F. T. Read quoted two instances from his own experience of brickwork giving way, and said he had come to the conclusion that it was impossible to give too much care and attention not only to the building of the piers themselves, but also to the careful bedding of the stanchions, bases, and bedstones on the brickwork, and in all cases where it was practicable, they did make the base of the stanchion or column of sufficient size to transmit the load direct on to the brickwork. It was a positive advantage to omit the bedstone, for they thereby saved one bed joint, which was a possible source of failure.

Mr. B. J. Capell, speaking as to the time during which the load was acting on the piers, remarked that it had been suggested that the sudden application of the load must have had something to do with the failure taking place earlier than it would otherwise have done. He, on the other hand, would ask whether it was not very probable that the piers would have failed under a lighter load if it had been pressing thereon for a longer period. He put his ear to some of the piers as the pressure was applied, and, long before the failure, heard a peculiar cracking noise, and his idea was that if the pressure had not been increased, but had merely continued, the piers would have failed under lighter weights than those recorded.

The President, in putting the vote of thanks, said he was sure the Institute were exceedingly obliged, not only to the Committee, but to all the gentlemen who had had anything to do with these tests, because, although many who had had a considerable experience in brickwork fancied they knew a great deal about the matter, the fact was that no such experiments as had been reported upon that night had been made before. Of course, it was very unpleasant to find that the old theories on which they had worked for so long were no longer tenable, but that was the effect of many scientific investigations. There were many points in these experiments which, he thought, required a little more elucidation. In the first place, they ought to have had a fair number of the bricks with which every pier was built tested by themselves so as to know what the average of them would bear. Bricks were not all equal, by any means. Another point was as to the mortar with which they required to make some experiments. They wanted to know the proportions, the excellence, and the elements of which the lime consisted, the way in which it had been burned, and its weight; also the quality of the sand, and the proportion in which it was mixed with the lime. Some years ago he made some experiments on lime mortar with very indifferent lime—almost chalk lime—and sand which was almost like flour, and he found that an immense deal depended on the proportion in which the sand was mixed with the lime. Again, very few of them took the trouble to ascertain whether what they all described as sharp sand had any special value. Of course, if the lime dissolved a certain proportion of silica in the sand—as they believed it did—it was very important that this sand should not be mixed with earthy or other materials. When they had arrived at the exact proportion and the exact quality of the sand, they wanted to know the effect of time on the hardening of the mortar. Then there was the question of the excellence of the in the matter. Mr. Pite wanted some scale by gard to the absolute breaking weight shown by the experiments, and that was also of great importance. But if this was to be of any use they would have to know that the qualities of the material used were the same as in the experiments, and above all things they would want to know that the test piers had not been built with infinitely more care than would be used by an ordinary bricklayer upon work over which no particular supervision was exercised. Further, he would have liked some experiments made as to which was the best bedding that could be used. In the matter of brickwork there were a variety of things which, if they did not give way, they took for granted were an excellent method to adopt; but when they gave way they began to look into the matter, and they very often found that what they supposed was the most certain way to ensure safety was the very cause of the work giving way. He had come to the conclusion that the fewer joints they could have in brickwork the better. He had made experiments on 9-in. cubes of brickwork, and 31 tons was about what a cubic foot would bear, the average load under which those 9 in. cubes cracked being about 17 tons. That was the weight borne by stock bricks set in mortar or sometimes in cement, which had been kept for the best part of a year; these were placed in the press between ½-in. or ⅝-in. pieces of soft yellow pine. He found that paviors and malms bore very much less. Gault bricks were very pretty to look at, and he believed that under pressure they bore considerably more than a stock, but they were the most detestable bricks that any architect ever allowed himself to use.

The vote of thanks was passed unanimously.

Professor Unwin, in reply, said that some credit had been given to him which did not belong to him. He did not direct the experiments nor tabulate the results; that work was done by Messrs. Street and Max Clarke. He was not even present at the last series of tests. He had, however, given advice on various points during the course of the tests, and he hoped that had been useful. As to two questions specially put to him, as far as he knew the frog in the brick was a distinct source of weakness. As to the element of time, he thought they would find that in the case of bricks and mortar cubes, the more slowly the load was applied the lower would be the breaking power. The load was applied fairly slowly in the tests under notice, and he did not think there would have been a great deal of difference if they had extended the time to one or two hours; still, the element of time was in that direction. Of course, if the load was applied with velocity it would be another matter. Mr. Woodward seemed to think his (the professor's) opinions should be disregarded, because he expressed the opinion that he knew nothing about brickwork. But he did not say that; what he said was that he claimed no infallibility with regard to any of these points. He was an engineer, and engineers occasionally had to do with brickwork on rather a large scale.

The President announced that the next meeting would be held on Monday, January 11, for the election of candidates for membership, and to receive the deed of award of the prizes and studentships, 1896-97.

THE ANCIENT TOWN HALLS OF EUROPE.*

THROUGH the kindness and consideration of the members of the Edinburgh Architectural Association, I occupy the President's chair for a second term, and it is one of my duties to deliver an address on the opening night of the session.

Last year I chose as my subject the education of the architect, as that question was then being much discussed.

This year I have chosen one which will appeal to a much wider audience, and I hope to give it some application to a project in which all the citizens of Edinburgh are much interested. The subject of my address is the Town Halls of Europe from the twelfth to the sixteenth centuries, and I shall endeavour to show you what the great and small municipalities of past ages did in rearing in their midst buildings whose beauty and magnificence show that their citizens took a greater pride in and lavished more money on such buildings, and gave more employment to artists of all kinds than we do who boast of greater wealth, power, freedom, and education.

The great municipal palaces of Europe, which form such a valuable exposition of the art of their time, were built, some in the twelfth and thirteenth, but mainly in the fourteenth, fifteenth, and sixteenth centuries, and were the visible embodiment of the independence and self-government which the citizens of the industrial and trading communities of that period struggled for and obtained.

Municipal freedom and institutions are, of course, of a much earlier date than the times I am to deal with. Rome granted self-government and municipal institutions to numerous provincial cities of the Empire, subject, however, to the Imperial Governor of the Province.

While the rule of the Empire became more autocratic at its centre, these municipalities grew and prospered, and this led to many quitting Rome in order to enjoy the privileges of citizenship in them. But the decline and fall of Rome involved the destruction of these cities, and for many succeeding centuries municipal freedom and institutions practically disappeared. During these centuries Europe was in a state of constant ferment; the weak could only find protection by ranging themselves under the banner of the strong; and hence arose the feudal system, the natural outcome of the lawlessness of the times, which tended to suppress the freedom and the personality even of the individual.

Against the domination of this system arose the spirit of industry and commercial enterprise.

There is a spot in the north of Italy where, during these dark centuries, a rich and prosperous town arose and revived municipal institutions as early as the seventh century.

Venice was founded by the peaceful inhabitants of the towns of the mainland, who, flying before the hordes of barbarians then overrunning Italy, took refuge on the islands of the lagoons, and there became a great maritime and trading power, secure against invasion from the mainland, and having free access by sea to all the coast of the Mediterranean.

As Europe gradually settled down again many towns, especially in the north and centre of Italy, began to imitate the independent constitution of Venice.

They threw off the ties of feudalism and renounced allegiance to any intermediate power between themselves and the German Emperor, who was also the representative of the Western Roman Empire. These communities assumed the privilege of regulating their own affairs, as if they were independent republics. With the beginning of the Crusades and the consequent flow of great bands of soldiers and adventurers travelling to Palestine through the south of Europe, a wider field was opened for trading and enterprise, and these Italian republics did not allow Venice alone to reap the benefit of it. All did what they could to obtain their share of traffic, and, for a time, Pisa and Genoa not only rivalled, but even bade fair to eclipse Venice in the trade to the East. It was in those many independent centres that the Palazzo Publico, or Town Hall, was erected.

In it the Town Council, from which any one having the remotest claim to nobility was rigorously excluded, met to decide all matters of town administration, and the town's relations to its neighbours.

The Town Hall became the centre of the life of the town, and the citizens made it their care that it should in all respects be a worthy indication and emblem of their freedom and prosperity.

Looking at the map of Europe we recognise the favourable situation of Italy for the purposes of trade with all countries bordering on the Mediterranean. Seamanship was, however, not very far advanced in these days, so that their vessels rarely passed out of the Mediterranean.

The distribution of merchandise from the East throughout the centre and north of Italy was easily accomplished by the Venetians and Pisans, using for transport the rivers at the mouths of which stand their towns.

A further distribution of goods was effected in France by way of Marseilles, Narbonne, Nimes, &c., and in Spain by way of Barcelona and Valencia.

In those days of few roads, the traders took advantage whenever possible of the great natural water highways, and therefore we find that the great trading towns of these times grew up either round the coast or on one of the great navigable rivers of the interior. It was then more difficult to arrange for transport to the centre and north of

* Inaugural address to the Edinburgh Architectural Association, by the President, Dr. Rowand Anderson.

Europe; and to reach such important South German towns as Ratisbon, Augsburg, Nuremburg, and Ulm, a long overland journey had to be taken across the Alps. The merchants of these towns went themselves to Venice, returning with their goods by the Pass of Brenner. These towns, the most important in South Germany, are all situated on the Danube or its tributaries, and these provided facilities for dispersing the commodities which the enterprise of the merchants had obtained.

The improvement in the science of navigation, in the beginning of the fourteenth century, coinciding as it did with the withdrawal of the privileges which the Italian merchants had enjoyed in some of the great fairs of the interior, encouraged them to venture beyond the Straits of Gibraltar, and, from this time, by far the greater part of the Eastern trade found its way into Europe by the ports of the North Sea and the Baltic.

Already the countries of the north carried on a brisk interchange of products. England was famous for its wool, and Flanders was unrivalled in the art of weaving it into cloth. The cities of Flanders, originally small communities of weavers, combined into guilds to ensure freedom to prosecute their industry undisturbed, and grew into rich and prosperous towns, and the extension of trade to the south of Europe greatly increased their wealth and prosperity. Flanders commended itself to the Italian merchants as a suitable place of disembarkation for their goods, being situated just at the entrance to the boisterous northern seas, into which they did not venture, and as being already a country of great commercial prosperity. Merchants of all nations awaited the arrival of Eastern cargoes in Bruges, Ghent, and Antwerp, where they were transhipped and then carried to all the ports of the north. From these ports, such as Lübeck, Hamburg, Stralsund, Stettin, Danzig, &c, access was got to the interior by means of the rivers Elbe, Weser, Rhine, Oder, &c., where are the important towns of Bremen, Breslau, Cologne, &c. All these towns lived by their trade, and banded together for mutual protection into the great Hanseatic League, which founded communities and enjoyed privileges in almost all the trading centres of Europe.

The remnants of this League continued to the present day, and were only extinguished after the unification of Germany.

To this later period belong most of the Town Halls I am about to show you, and they will, I think, convey some idea of the wealth and importance of the towns which could afford to raise such buildings.

The northern Netherland provinces, which are now known as Holland, were longer in coming to maturity than those of the south. Flanders became early distinguished for its manufactures, while Holland was chiefly occupied with fisheries.

At a later period Holland distinguished itself as one of the great maritime powers, and it was able to fight for and obtain its independence from the Spanish rulers who subdued the rest of the Netherland provinces. The persecutions of the Spanish Inquisition drove many of the Flemish weavers and others into Holland, and as the importance and wealth of the cities of the south decreased, that of Amsterdam and other cities of Holland increased in proportion. The later development of these cities is manifested by the architecture of their Town Halls, which are distinctly of a later style than those of the south.

There is a very definite distinction between the municipalities of Flanders and those of France during the Middle Ages.

The latter were, for the most part, revivals of municipalities which had actually existed in the time of the Roman Empire. The privileges enjoyed by these municipalities had been in abeyance during the domination of feudalism, but the traditions had remained, and the time came when the cities would no longer remain passive under the oppression of their hereditary rulers, or of the bishops who, in many instances, purchased temporal power over them. The citizens, therefore, united in a body, and demanded back their ancient privilege of self-government, and, as the king was only too ready to avail himself of any means of curbing the power of the barons, they usually obtained a Royal Charter recognising their demands. But, although the privileges of the French cities were of much older origin than those of Flanders, for instance, France was not so full of commercial life, and, consequently, their municipalities take but a secondary place when compared with those of Flanders and Italy.

Town Halls of outstanding merit are not so common in France as in the other countries I have mentioned, because the citizens of the French towns helped largely in the erection of the magnificent cathedrals for which their country is famous, and in return were allowed to use the cathedrals for great secular meetings of general popular interest.

You must not assume that, in submitting the views of these Town Halls for your inspection, I suggest any one of them as a model to be followed for a Town Hall of the present day. Our wants, both in nature and extent, are very different from the wants of these early municipalities, and so must our buildings differ from theirs. All I want you to notice is that these ancient municipalities took a pride in making their Town Halls an ornament to the town, and representative of the art of the time.

In the few concluding remarks I have now to make, I am not going to try to solve the problem of finding a site for Mr. Usher's munificent gift. I have no doubt that every possible site has already been thought of, and I feel sure that the Committee of the Town Council are giving their earnest consideration to the whole question, and endeavouring to come to a sound decision. In doing so, I hope they will not forget that the Castle of Edinburgh—the one great and outstanding feature of our town, known to all the world—must not be interfered with, but must be kept isolated, now and for all time. I would also say that the site chosen should be the centre of as large a populated area as possible; that no open spaces should be filled up; and, finally, that the Hall, when built, should not be less an ornament to the city than many of the buildings I have shown you are to the towns where they exist.

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I think Edinburgh is to be congratulated on numbering among its citizens such men as Mr. Findlay, Mr. McEwen, and Mr. Usher, who have so nobly given of their substance to beautify the city, and add to the education, enjoyment, and convenience of its citizens.

Let us trust that their good example will be followed by others, as wants are growing and social problems are waiting for solution. I would venture to refer to two of those. The first is the necessity for a properly-equipped and endowed school for the industrial arts. Many are apt to confound this with technical education, but it is entirely distinct from it, and in every country of Europe the two things are kept separate.

The school that has been established here is doing much good work, but it is small, and its power is cramped for the want of means and accommodation. In a great educational centre like Edinburgh this ought not to be. Think of the enormous sums that have been, and are still being, given for the advancement of what one may call book-learning. Is high-class artistic labour not as worthy of encouragement, and to a large extent more necessary? Labour is as worthy of honour and respect as learning, and the withholding of these from it is the cause of much of the inferior work and trashy and meaningless design we see everywhere.

The other want to which I would refer is one intimately associated with one of the serious social problems of the day.

And it is the provision of places to which the people can resort in thousands, especially in winter. In summer what with volunteering, golf, cricket, and athletics of all kinds, much has been done for healthy recreation for all. But the winter and the dark days, what can be done then by the countless families and individuals, many of whom have to work out their existence on a small wage in a very small and stuffy house in a dismal and depressing street of tenements?

Men and women must have recreation for mind and body. They are entitled to it, and if they cannot get the right kind, they will too often take the wrong. And who is to blame? In a society such as ours, where great wealth goes to the few and a bare subsistence and poverty to the many, there can be no better outlet for the surplus wealth of those on whom fortune has shone than in trying to rectify at least some of the great inequalities we see around us, and there can be no better way of doing so than by making provision for the legitimate and orderly gratification of those instincts and desires that are common to all, rich and poor alike.

The great want of this and every other city in the kingdom is a huge winter garden easily accessible and free to all, into which the people can flock in thousands and find light, heat, beautiful and attractive surroundings, good music, and every legitimate entertainment. There is at present a site vacant in Edinburgh admirably suited for such a purpose. I refer to the Cattle Market in Lauriston, and there I suggest that a winter garden should be erected. A cattle market there has long since become a nuisance to the whole locality, and a better one can be provided elsewhere. Such a building as I suggest could not be better situated or readier of access to the classes I am pleading for. The cattle market shows an area of upwards of 145,000 square feet, greater than the combined areas of the Waverley Market, the Music Hall, the Synod Hall in Castle-terrace, and the McEwen Hall.

This will show you that I am not exaggerating when I say that you could have here, all under one roof, a large auditorium capable of holding many thousands for orchestral and popular concerts, and public meetings, ample space for military tournaments, fruit and flower shows, and extra large bazaars. A good organ should be set up and played daily at fixed hours, and the town could not do better than maintain for the enjoyment of all who flock here a good orchestra. Ample means for refreshment should also be included, and open spaces where recreations of all kinds could be indulged in. The rich can and do provide all these things for themselves, under the most favourable circumstances and surroundings, but the poor who share our common nature cannot do so.

There would be less seething discontent, drunkenness, and crime if you gave to them a share of the brightness and beauty God meant for all. Wanting such a place as I describe, the street corner and the public-house is about all there is to offer them.

Why are the public-houses so well filled? Not because of the love of drink, at least in the first instance, but because one finds there light, heat, and social intercourse.

In such a place as I picture to you families by the hundred could go and spend a bright and pleasant evening, which would go far to soothe and cheer them after their day's toil.

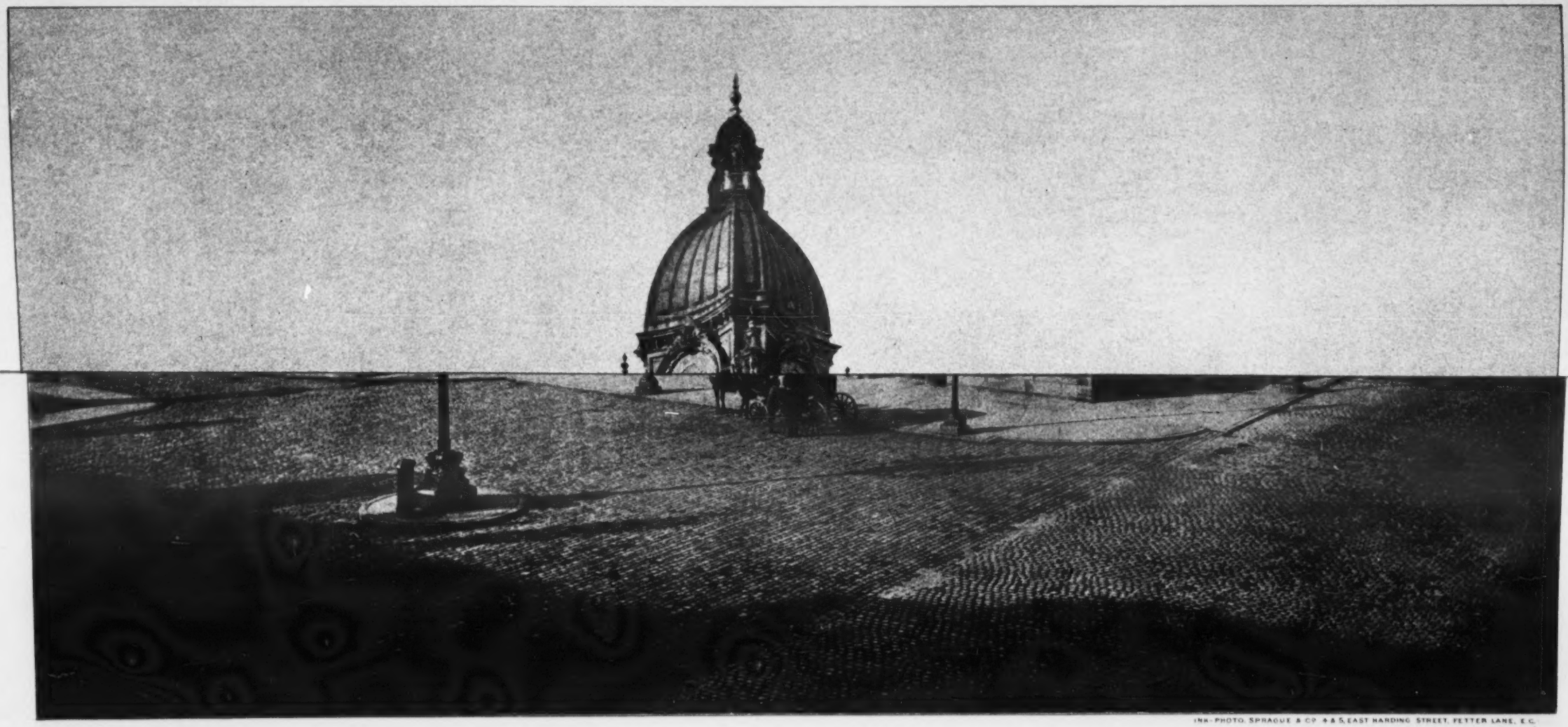
I do not forget or desire to ignore the many charitable and self-sacrificing individuals who labour for the well-being of their fellow-creatures, or those associations which have been organised to relieve some of the dull monotony and brighten the surroundings of the poor. But all that is charity, and while charity is stated on the highest authority to be the greatest of the virtues, it is doubtful if much of what is commonly called charity brings permanent relief to those who receive it.

If any permanent good is to be effected, you must change the habits and desires of the people, and you can only do this by giving them something better.

Not so very long ago the manners and customs of the male portion of the upper classes were not of a very high standard. The improvement was brought about largely, I believe, by increased social intercourse, and the refining influence of the presence of women in most of men's social gatherings and amusements. Like causes will produce like effects. Make such a place as I speak of not a charity, but a recognised social institution, and the common resort to it a part of the every day life of the people. Let each one here find the attraction and amusement he seeks for; the unconscious restraint exercised by the best would prevent excess on the part of the weak, and all would be elevated and refined by their beautiful surroundings.

The day is not far distant when the provision of such buildings will be looked upon, in a climate such as ours, as essential to the healthy life of a community, and of more importance than police-cells, night refuges, and poor-houses, and he who out of the abundance of his wealth erects such a building will have not only an enduring and material monument to his generosity, but, what is better than all, the satisfaction of knowing that he has helped to brighten the lives of thousands of his less fortunate fellow-citizens in his own and succeeding generations.

[The address was illustrated by upwards of forty limelight views of the Town Halls of Italy, Germany, Belgium, Holland, and France.]



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LEEDS ARCHITECTURE: THE TOWN HALL.—The late Cuthbert Brodrick, Architect.

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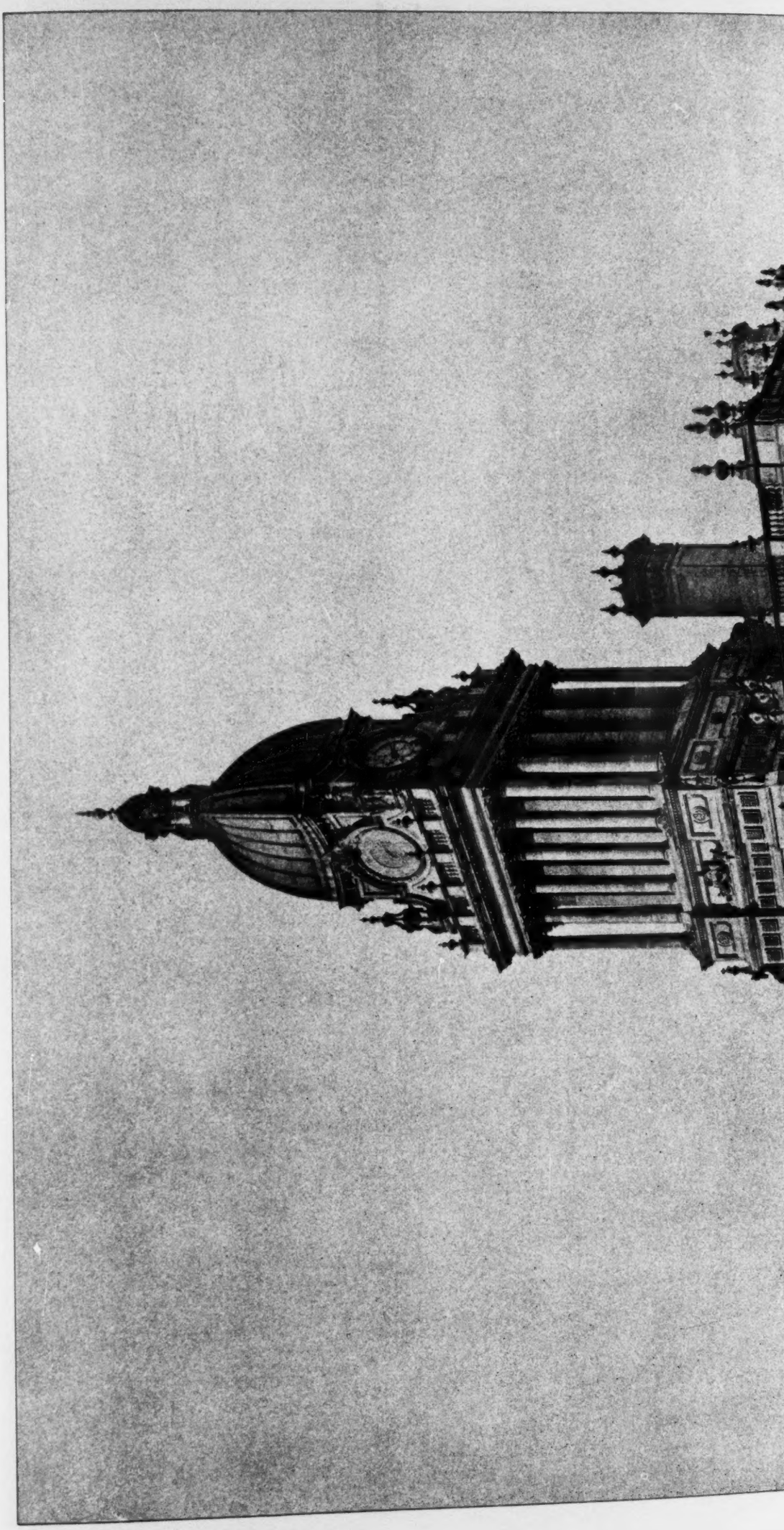
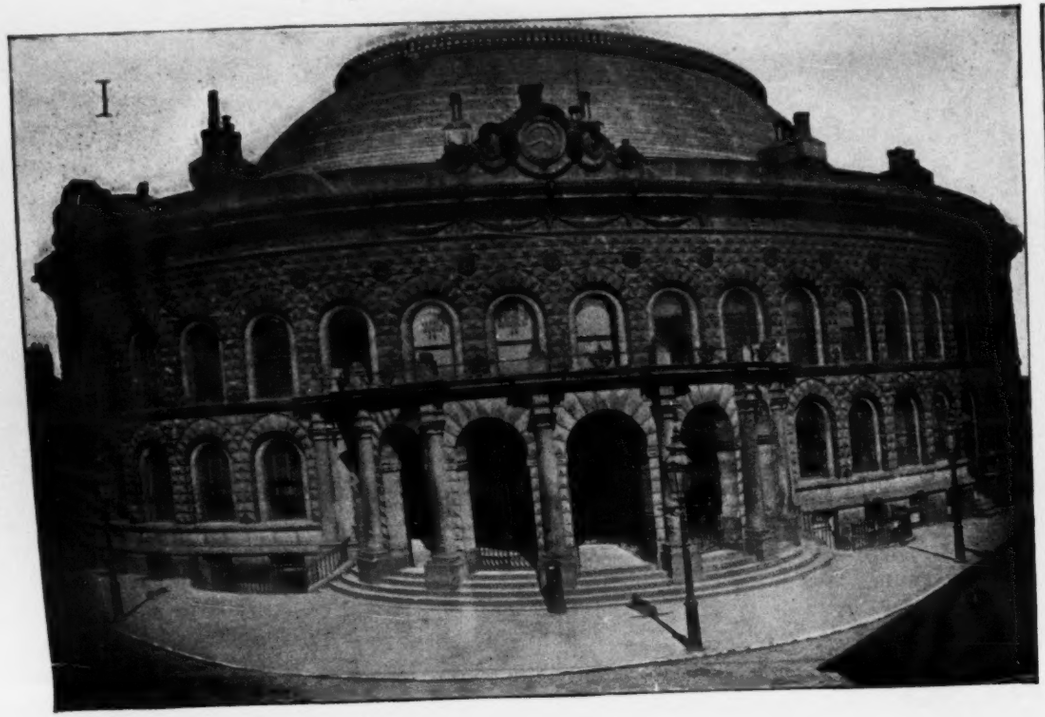


INK-PHOTO SPRAGUE & Co 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

LEEDS ARCHITECTURE: THE TOWN HALL.—The late Cuthbert Brodrick, Architect.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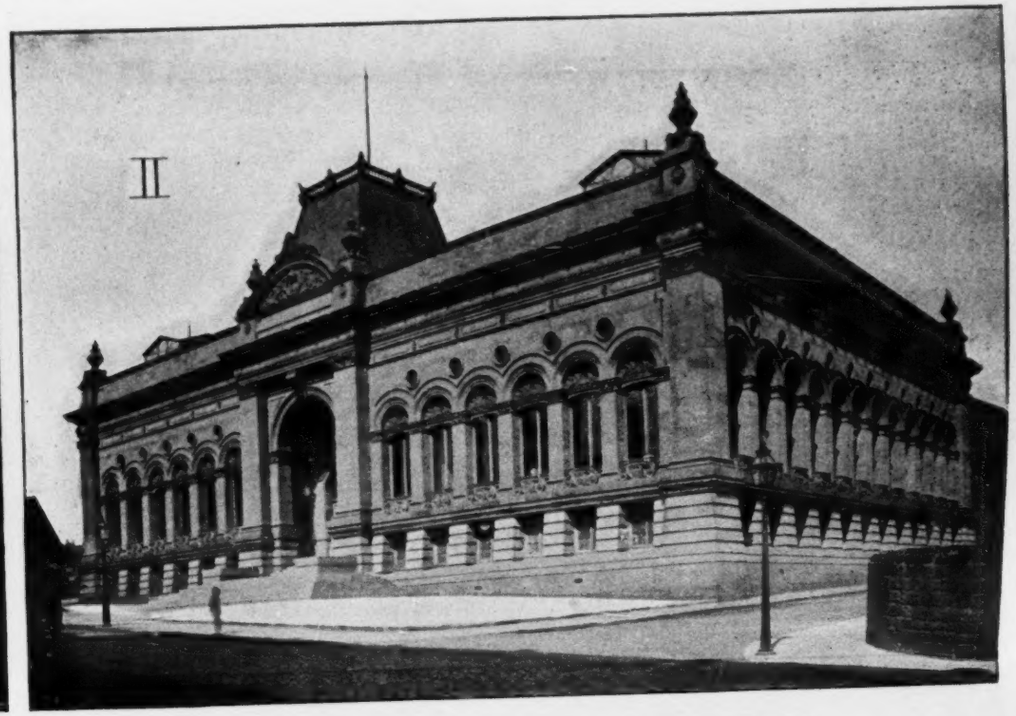
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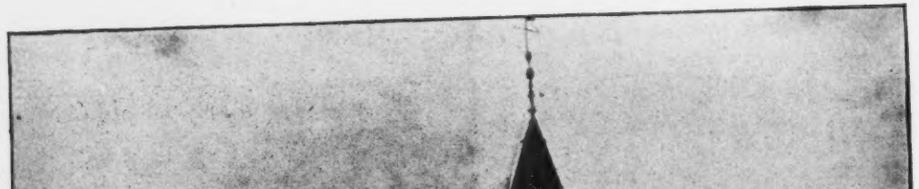

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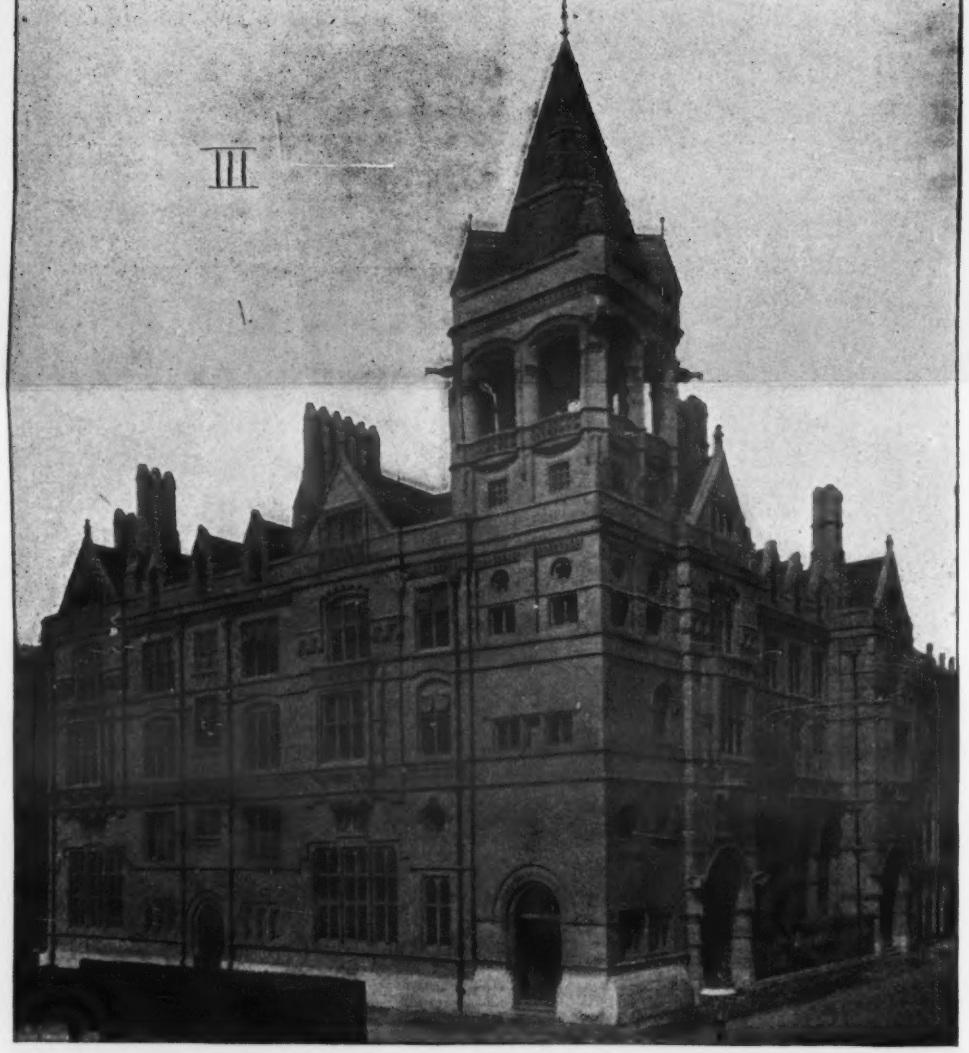

I. CORN EXCHANGE.—By the late Cuthbert Broderick.
II. MECHANICS INSTITUTE.—By the Same.
III. YORKSHIRE PENNY BANK.—By Messrs. Perkin & Bulmer.
IV. ROYAL EXCHANGE.—By Messrs. T. H. & F. Healey (Bradford).
V. THE INFIRMARY.—By the late Sir Gilbert Scott.

LEEDS ARCHITECTURE: VARIOUS BUILDINGS.

From Photographs by W. CHILD.

LEEDS ARCHITECTURE: NEW BANK IN PARK ROW.—Mr. A. Waterhouse, R.A., Architect.

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PHOTO-LITHO. SYRACUSE & CO. 14 & 15 EAST JARDINE STREET, FETTER LANE, E.C.

LEEDS ARCHITECTURE: YORK CITY AND COUNTY BANK.—Messrs Smith & Tweedale, Architects

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PHOTO-LITHO. SPRAGUE & CO. 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

LEEDS ARCHITECTURE: MUNICIPAL BUILDINGS.—Mr. G. Corson, Architect

LEEDS ARCHITECTURE: YORKSHIRE COLLEGE.—Mr. A. Waterhouse, R.A., Architect.

Europe; and to reach such important South German towns as Ratisbon, Augsburg, Nuremburg, and Ulm, a long overland journey had to be taken across the Alps. The merchants of these towns went themselves to Venice, returning with their goods by the Pass of Brenner. These towns, the most important in South Germany, are all situated on the Danube or its tributaries, and these provided facilities for dispersing the commodities which the enterprise of the merchants had obtained.

The improvement in the science of navigation, in the beginning of the fourteenth century, coinciding as it did with the withdrawal of the privileges which the Italian merchants had enjoyed in some of the great fairs of the interior, encouraged them to venture beyond the Straits of Gibraltar, and, from this time, by far the greater part of the Eastern trade found its way into Europe by the ports of the North Sea and the Baltic.

Already the countries of the north carried on a brisk interchange of products. England was famous for its wool, and Flanders was unrivalled in the art of weaving it into cloth. The cities of Flanders, originally small communities of weavers, combined into guilds to ensure freedom to prosecute their industry undisturbed, and grew into rich and prosperous towns, and the extension of trade to the south of Europe greatly increased their wealth and prosperity. Flanders commended itself to the Italian merchants as a suitable place of disembarkation for their goods, being situated just at the entrance to the boisterous northern seas, into which they did not venture, and as being already a country of great commercial prosperity. Merchants of all nations awaited the arrival of Eastern cargoes in Bruges, Ghent, and Antwerp, where they were transhipped and then carried to all the ports of the north. From these ports, such as Lübeck, Hamburg, Stralsund, Stettin, Danzig, &c, access was got to the interior by means of the rivers Elbe, Weser, Rhine, Oder, &c., where are the important towns of Bremen, Breslau, Cologne, &c. All these towns lived by their trade, and banded together for mutual protection into the great Hanseatic League, which founded communities and enjoyed privileges in almost all the trading centres of Europe.

The remnants of this League continued to the present day, and were only extinguished after the unification of Germany.

To this later period belong most of the Town Halls I am about to show you, and they will, I think, convey some idea of the wealth and importance of the towns which could afford to raise such buildings.

The northern Netherland provinces, which are now known as Holland, were longer in coming to maturity than those of the south. Flanders became early distinguished for its manufactures, while Holland was chiefly occupied with fisheries.

At a later period Holland distinguished itself as one of the great maritime powers, and it was able to fight for and obtain its independence from the Spanish rulers who subdued the rest of the Netherland provinces. The persecutions of the Spanish Inquisition drove many of the Flemish weavers and others into Holland, and as the importance and wealth of the cities of the south decreased, that of Amsterdam and other cities of Holland increased in proportion. The later development of these cities is manifested by the architecture of their Town Halls, which are distinctly of a later style than those of the south.

There is a very definite distinction between the municipalities of Flanders and those of France during the Middle Ages.

The latter were, for the most part, revivals of municipalities which had actually existed in the time of the Roman Empire. The privileges enjoyed by these municipalities had been in abeyance during the domination of feudalism, but the traditions had remained, and the time came when the cities would no longer remain passive under the oppression of their hereditary rulers, or of the bishops who, in many instances, purchased temporal power over them. The citizens, therefore, united in a body, and demanded back their ancient privilege of self-government, and, as the king was only too ready to avail himself of any means of curbing the power of the barons, they usually obtained a Royal Charter recognising their demands. But, although the privileges of the French cities were of much older origin than those of Flanders, for instance, France was not so full of commercial life, and, consequently, their municipalities take but a secondary place when compared with those of Flanders and Italy.

Town Halls of outstanding merit are not so common in France as in the other countries I have mentioned, because the citizens of the French towns helped largely in the erection of the magnificent cathedrals for which their country is famous, and in return were allowed to use the cathedrals for great secular meetings of general popular interest.

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Illustrations.

THE plates in this issue consist entirely of illustrations of the architecture of Leeds, and the buildings which they illustrate are all referred to and criticised in the first article in the present issue.

The illustrations include Leeds Town Hall, from a photograph by Mr. Child, taken not long after the completion of the building and before it had been so much darkened by the effect of smoke as it is at present; the Municipal Buildings by Mr. Corson, and the York City and County Bank, by Messrs. Smith & Tweedale, from drawings lent by the architects; the new Bank in Park-row and the new block of the Yorkshire College, from the drawings of the architect, Mr. Waterhouse; and a sheet giving small views of five buildings,—the Mechanics' Institute and the Corn Exchange, by the late Mr. Brodrick; the Yorkshire Penny Bank, by Messrs. Perkin & Bulmer; the Royal Exchange, by Messrs. T. H. & F. Healey, of Bradford; and the Infirmary, by the late Sir Gilbert Scott.

MAGAZINES AND REVIEWS.*

THE most interesting paper in the *Art Journal* is that on the Vienna collection of drawings by old masters called the "Albertina," considered in reference to the light which they throw on some of the National Gallery pictures. The article is accompanied by a good many reproductions from drawings in the collection, including an original drawing by Michelangelo for the figure of Christ in the "Entombment" in the National Gallery. This drawing settles the question of the design of that figure being by Michelangelo himself, though it may still be doubtful whether he actually worked on the painting. The frontispiece to the number is a reproduction of Sir E. Burne Jones's interesting early work, "Sidonia." The number contains also a sketch of the bedroom in which Lord Leighton died, but we have not much sympathy with this modern habit of invading the *penetralia* of eminent men.

In the *Architectural Record* Mr. Goodyear continues his papers on "Perspective Illusions in Italian Churches," and has wisely introduced some measured geometrical drawings instead of inviting his readers to accept the doubtful evidence of photographs. Some of the drawings seem to prove an attempt at perspective illusion; some, such as the arcade at Fiesole, certainly do not. It shows that the arches were of different widths, but not on any fixed scheme. Even if the intention be proved, it does not show that it was a sensible proceeding. Among other articles in the number are "The Smaller Houses of the English Suburbs and Provinces" by Mr. Banister F. Fletcher, and "Sculpture as Applied to the External Decoration of Paris Houses," by M. Fernand Mazade.

The quarterly psychological journal, *Mind*, which seldom touches on artistic subjects, contains an exception in its last issue in the shape of an article by Dr. Colley March on "Evolution and Psychology in Art." It is an attempt to trace the various classes of motive and influence which gave rise to artistic imitation and production. The writer sums up with the suggestion that "the five elements of art may be analysed upon an urn."

> "Artifice has moulded a hollow vessel of earth and has baked it so that it will hold water. As the gourd was in many cases its model, expectancy has required its base to be much narrower than strict utility might have provided; but the ring that was once a stand for it has now become its foot. Artistic treatment has given it outlines that we, or others, call graceful; has coloured its clay, and washed its surface with a translucent glaze; and has carried aloft in symmetrical curves those handles that were once of osier or of cords. Round the foot, and shoulder, and neck, expectancy has drawn bands of Ornament, skeuomorphs of binding, of basketry, or of textiles; and a phyllomorph is parasitic upon them. Embellishment has hung a foolish chain in a festoon between the handles. And Fine Art has filled the middle zone with a bas-relief, or a painting, that moves the soul."

The *Fortnightly* contains an article by Mr. H. H. Statham on "The Proposed New Government Offices," giving plans of the principal schemes proposed during the last forty years, (including that of Barry's great scheme for the concentration of the Government Offices), with an adverse criticism on the latest proposals.

The *National Review* contains an article by Mrs. Russell Barrington on Lord Leighton's drawings, somewhat exuberant in style, but containing some good remarks.

In *Macmillan's* "Christmas at Byland" is a clever description of an imaginary entertainment given by the Abbot of Byland to the denizens of some of the neighbouring abbeys.

A Beautiful World, the small quarterly publication of the Society for "Checking the Abuses of Public Advertising," should be read by those who are interested in preventing our town and country scenes from becoming hopelessly vulgarised. The report of the last general meeting of the Society, which occupies part of its pages, includes what is, we believe, the last public speech that Mr. William Morris ever made.

The *Artist* devotes its pages to a monograph on the works of Frederick Sandys, the illustrations to which form a valuable collection of many of the designs of this remarkable and little-known artist.

In the *Engineering Magazine* is a paper on "Fireproof Construction and Recent Tests" by Mr. Himmelwright. It gives the sections of various floors, and statistics of their behaviour under fire tests.

Scribner contains an illustrated article on Sir John Millais and his works.

The *Century* has an article on "Mdme. Demont-Breton as "a painter of motherhood," with illustrations of some of her works; also "Souvenirs of a Veteran Collector," Mr. S. P. Avery, with a number of fac-similes of sketches and autographs by eminent artists, which are of no little interest.

Harper includes an article on "Electricity Direct from Coal—by its Inventor," on which we may have something further to say.

The *Gentleman's Magazine* includes an article on "Memories of St. James's-square," by Mr. W. Connor Sydney, giving some account of persons of note who have been connected with various houses in the square.

The *Pall Mall Magazine* contains a well-illustrated article on Blickling Hall, the well-known old Norfolk house.

Le Monde Moderne gives a history, with plans and other illustrations, of the Church of the Sacré Cœur at Montmartre.

COMPETITIONS.

DESIGN FOR A FOUNTAIN.—We regret to have to record a very unsatisfactory termination to this competition, which was advertised in our columns some time since, the drawings being sent to the care of the publisher of this journal.* The competition was promoted by a lady who wished to give 50*l.* towards the erection of such a fountain. The Corporation required the drawings to be submitted to them, and after a long delay refused to accept the design selected by the promoter and offered a design by their own Surveyor, which the lady refused to accept, and (very naturally) withdrew her offer of 50*l.* Twenty-four designs were sent in, and the premium of 10*l.* has been awarded to the author of the design marked "Dum Spiro Spero." The addresses of the authors of the following designs are wanted in order to return them—"Utility," "Roughside," and "Tignalhuille." The addresses may be sent through the editor of this journal.

THE SOUTHEND ESTATE, DARLINGTON.—The result of the competition for the laying out of this property as a residential building estate is that the first prize has been awarded to Mr. Robert E. Brinkworth, F.S.I., architect, surveyor, and land agent, of Chippenham, Wilts, and the second to Mr. S. E. Burgess, C.E., of Stoke Newington, London.

CITY HALL, BELFAST.—A special meeting of the Belfast Corporation was held on the 11th inst., for the purpose of confirming the minutes of the previous meeting in relation to the plans for the new City Hall. The Town Clerk read the minutes of the meeting of the Council in committee selecting plans numbered 30, 42, and 43. Councillor Sir William M'Cammond moved, after some discussion, "That the minutes of the Council in committee on Monday, December 7, 1896, be confirmed, and, accordingly, that the Council, acting upon the advice of the assessors, do hereby select three plans for the City Hall—Nos. 30, 42, and 43—for the authors to enter into the final competition." Councillor M'Cammond remarked that the previous mistake lay in the opening of the three letters on the first day. But there was nothing done intentionally. Councillor Barklie, in seconding the motion, said that the whole fifty-one plans had been carefully inspected, and he did not think it was outside their province to do that, because, from condition "A" it would be seen that the function of the assessors was to advise and assist the Corporation in selecting three plans from the sketch designs. The motion was ultimately agreed to unanimously.

ARCHITECTURAL SOCIETIES.

GLASGOW AND WEST OF SCOTLAND ARCHITECTURAL CRAFTSMAN'S SOCIETY.—The opening lecture of this new Society was delivered recently by the honorary President, Professor Charles Gourlay, in the Andersonian Buildings, to an audience of about 150 past students and friends, the subject being "Paris from an Architectural Craftsman's Point of View." Mr. James Lochhead, President of the Society, presided. After a few general remarks on Paris, the Professor dealt with its system of sewerage, its methods of building practice in the materials of stone, plaster, concrete, iron construction, and parquet flooring. He then pointed out the great advantages the Paris architectural craftsman had in the admirable and excellently-arranged museums of casts and other objects of instruction, to see which makes one ardently long for the completion of the new Art Galleries at Kelvingrove, where it is hoped that similar large and accurate casts will be placed for all to study by sketching and measuring. Lastly, the lecturer showed that the history of architecture could be studied with great success in Paris, because of the excellent remains of ancient and classic buildings to be found in the Louvre, and also the buildings remaining till the present day, which show the Romanesque, Mediæval, and Renaissance styles very fully. The lecture was illustrated by a large number of photographs and diagrams, which were hung round the walls, by examples of French joinery, and by over sixty slides of Parisian buildings, which were shown by the lantern.

DEVON AND EXETER ARCHITECTURAL SOCIETY.—A meeting of the members of the Three Towns branch of the Devon and Exeter Architectural Society was held on the 10th inst. at the School of Art, Princess-square, Plymouth, Mr. C. King presiding. Mr. H. G. Luff, A.R.I.B.A., in introducing a discussion on the need of taking some action to prevent public officials from competing for private work, said that in Devonport gentlemen practising as architects were more or less boycotted by the officials of the Corporation, who performed work which really belonged to them, and by so doing really robbed them of their living. He wanted the branch as a whole to help the Devonport members to put a stop to that sort of thing. He proposed "That the architects practising in Plymouth, Devonport, and Stonehouse, and district, humbly submit to the various local authorities that professional men labour under great hardship and disadvantage from the fact that some of the officials and their assistants are in the habit of undertaking a large amount of private work which should be executed by professional men in private practice. This is not only prejudicial to private professional interests, but also to public matters, inasmuch as all public servants ought to occupy a perfectly impartial and disinterested position in the administration of their departments. They venture to hope that the various authorities will take such steps as they think necessary to effectually prevent the continuance of this practice. They would also suggest that all plans submitted to the authorities should be signed by an architect or surveyor. That the resolution be sent to the Town Clerks of Plymouth, Devonport, and Stonehouse, the Admiral Superintendent of the Dockyard, the Commanding Officer of the Western District, and the Town Clerk of Saltash." Mr. Shires sympathised with the object of the resolution, but pointed out that there was no law to compel public bodies to reject all plans which were not signed by an architect. They could simply suggest that the work should be discharged by professional architects. Mr. Richards seconded, and after further discussion the resolution was agreed to, subject to its approval by the Council of the Society. Mr. E. J. Jarvis subsequently gave a lecture on the subject of "Domestic Water Supply," which was illustrated by nume-

* The object of these notes is to point out anything in the contents of the current magazines which is of special interest to our readers, with occasional brief criticisms on the views expressed in such articles. When a magazine which has been sent to us is not noticed, it is because that number contains nothing that it is within our province to comment upon.

* It may be as well to state that this journal had no kind of responsibility or connexion with the matter, as one or two correspondents seem to have supposed; the drawings were received here merely to oblige the advertiser, who did not wish her name to appear in the matter.

rous limelight views. At the close he was cordially thanked, on the motion of Mr. Shires, seconded by Mr. Dwelley.

DUNDEE INSTITUTE OF ARCHITECTURE, SCIENCE AND ART.—A dinner and "At Home," under the auspices of the Dundee Institute of Architecture, Science, and Art, took place on the 10th inst., in the Queen's Hotel. Mr. Leslie Ower, F.R.I.B.A., the President, occupied the chair. After the dinner, the President delivered his address. He briefly recapitulated the work of the past session, and proceeded to remark that among the matters which had engaged the attention of the Council of the Institute and a small committee for some time past was the revision of the rules for the measurement of building work as desired to be amended by the Master Builders' Association. On the whole, the points of material difference between the architects and tradesmen were not very numerous, and he had no doubt they would be arranged amicably. The rules had now been revised and returned to the Master Builders' Association for their reconsideration. Thanks to ex-Lord Provost Hunter, the practice of public officials doing private work had to some extent been remedied, at least for the present; but it would be a most desirable rule, as well in the interests of the public as of the profession, and one which might be embraced in the new Corporation Bill, that all plans presented for the approval of the Council should bear the signature of the architect, engineer, or other person who had prepared them, so that the Council might know whether or not they were the production of a man of repute and skill in his profession. It was much to be desired that the pressure now being brought to bear upon the Royal Institute might result in the opening of its doors to admit all reputable practitioners who had been in practice for not less than seven years. Thus would be brought about what would practically be a system of registration, and no architect worthy of the name would be found outside the Royal Institute. As to the influence of the local Institute he thought they had perhaps been remiss in not making their voice better heard in matters affecting the architecture and the amenity of the city, as well as in other professional questions. The President, having referred with gratification to the laying out of Barrack Park, the proposed Seabraes improvement, and the proposed tramway extension, adverted to the new Corporation Bill. The President concluded with a reference to the influence of architecture upon the history of the nation, and an appeal to his professional brethren to remember that by the kind of buildings now erected, future generations would judge of the spirit of this age, and would learn our pursuits, and judge our aspirations, ambitions, hopes, fears, and religious beliefs; while by the skill shown in their construction they would judge of our knowledge, and from their beauty and fitness they would estimate the level of our art. The toast of the "Lord Provost, Magistrates, and City Council" was proposed by Mr. W. C. Leng. Ex-Lord Provost Sir James Low replied. Mr. William Alexander proposed the toast of "The Guildry," and the Lord Dean of Guild Paul responded. Other toasts included those of "The Master Builders' Association," proposed by Mr. J. J. Henderson, and replied to by Mr. John B. Hay; "The Strangers' and Kindred Architectural Societies," given by Mr. H. A. Pattullo, and responded to by Mr. R. G. Gildard; and "The Ladies," proposed by Convener Bell, and acknowledged by Miss Imandt. The company afterwards adjourned to the drawing-room, where a concert was given.

CARLISLE ARCHITECTURAL, ENGINEERING, AND SURVEYING SOCIETY.—The usual meeting of this Society was held in the Town Hall on Tuesday last, when Mr. S. W. B. Jack read a paper on "The Modern Suburban Villa." After generally discussing the questions of site, cost, &c., Mr. Jack proceeded to discuss the arrangements of the rooms of a house as exemplified by a large diagram of a villa planned by him. Mr. Jack favoured the Domestic style of architecture, and advocated that sitting-rooms should be provided with large chimney-corners, recesses, bays, &c., as they increased the beauty and comfort of the room. Narrow passages and staircases were to be condemned, the former wasting valuable space, the latter giving an air of meanness. He strongly advocated the formation of a large entrance-hall which could be used as a sitting-room. Mr. Jack illustrated his ideas by many diagrams, sketches, and plates.

ARCHITECTURAL ASSOCIATION OF IRELAND.—On Tuesday this Association held, at the Grosvenor Hotel, Dublin, what we believe is its first "ordinary meeting," when the President, Mr. R. Caulfield Orpen, delivered his opening address, in the course of which he said that their Association had done wisely in adopting, with only a very few modifications, the constitution and by-laws of the Architectural Association of London. He hoped that, by a knowledge of the good work which that Association had done, they might be encouraged themselves to start the work of their session with a stimulating optimism. The London student of architecture had many advantages which they in Dublin only could share in a minor degree. In the London streets the student who went about with his eyes open had education writ large, sermons in stones, and good in everything. An important section of the English Society's work was the visiting of works in progress or lately completed under the guidance of the architect himself, or of some one thoroughly conversant with the details of the building. He fully recognised the marked advance made in latter years in the matter of Dublin architecture, and the creditable work which in many instances enriched the streets, but he felt that, as a community, they were very backward in architectural appreciation. They should look to their Association to create a healthy rivalry among their embryo architects as well as among those who were responsible for rebuilding or adding to the number of the buildings in the city. Good work would result from an anxiety to show the best they could produce.—Mr. J. J. O'Callaghan asked where they would find anything more beautiful than some of the Classical buildings in Dublin, as, for instance, the old Parliament house? It was not necessary for the students to go beyond their own city in search of the most exquisite detail ever put together in the way of Classical work. In the course of the discussion, Mr. J. Holloway also thought that there was much more individuality in the works of Dublin architects than was to be seen in London, an opinion contradicted by Mr. McGloughlin and Mr. Mitchell, the latter of whom thought they had only to see such works as those of Mr. Norman Shaw, Mr. Pearson and Mr. Bodley, &c., to show that London architecture was well worth study and reverence.

GLASGOW ARCHITECTURAL ASSOCIATION.—A meeting of this Association was held at the rooms, 187, Pitt-street, on the evening of Tuesday, the 15th inst. Mr. Wm. Tait Conner occupied the chair. Mr. Henry F. Kerr, A.R.I.B.A., representative of Edinburgh Architectural Association, delivered a lecture entitled, "Notes on Elgin Cathedral." The purport of the lecture was to show what, in his opinion, had been the original disposition of the early church, which he (the lecturer) had carefully studied for some years. From the standpoint of design, proportion, and detail, few of our cathedrals could equal Elgin. The lecture was well illustrated with lime-light views.

ARCHÆOLOGICAL SOCIETIES.

SOCIETY OF ANTIQUARIES.—On the 10th inst. a meeting of this Society was held, Sir A. W. Franks, President, in the chair. Mr. F. D. Godman, F.R.S., was admitted as a Fellow. The President announced his appointment of Viscount Dillon as a Vice-President of the Society. The report of the deputation appointed by the Society to meet the Dean and Chapter of Peterborough was read. The deputation stated that, as the result of an inspection of the west front of the cathedral church, their opinion as to the practicability of repairing the back of the gables and arches without disturbing the face was confirmed, and they were convinced that if the building be pulled down a comparatively small part of it can ever be replaced, and that the parts that would be lost are among the most important chosen for such work, and that in the event of a hard winter both the open wall and the stones taken down would be certain to suffer. The Dean and Chapter listened to the deputation with courtesy and sympathy, and ultimately promised to give an answer in writing; they also expressed their inability to interfere, but were willing that the Society should communicate with Mr. Pearson.—A ballot was next taken for the election of a member of Council, and Sir John Evans, K.C.B., F.R.S., was declared duly elected, in the place of Dr. John Henry Middleton, deceased. The Rev. C. R. Manning exhibited a photograph of a large silver dish, of octagonal form, with incurved sides, and of Amsterdam manufacture, now used as a paten in Whatfield Church, Suffolk. Mr. A. J. Copeland exhibited a square glass bottle and a pottery vessel in form of a rabbit, both of Roman date, found in a gravel-pit at Preston next Wingham, Kent. The Provost and Fellows of Eton College exhibited a cocoa-nut cup with silver parcel-gilt mounts of the end of the fifteenth century, with somewhat unusual details. Mr. Haverfield communicated a note with reference to a supposed Mithræum at Burham, Kent, an account of which had lately been printed by the Society. He was now able to quote the opinion of M. Franz Cumont, the highest living authority on the subject, that there could be no doubt whatever that the building in question had been devoted to the worship of Mithras.—Mr. Oldfield then completed his paperon the Sculptures of the Mausoleum. All the heads in the collection broken from statues, except the three which he had interpreted as local divinities, with the several remains of figures of the same scale, he considered to be portraits. He would assign the figures of lions, originally perhaps twenty or more in number, to the peristyle of the Pteron, or beside the basement under the porticoes, guarding the entrance. The sculptures, however, which specially displayed the powers of the four rival artists, and on whose respective merits critics were still disputing in Pliny's day, were not, he thought, adequately represented by any of the friezes of which remains had survived.

ENGINEERING SOCIETIES.

SOCIETY OF ENGINEERS.—The forty-third annual general meeting of the Society of Engineers was held on the 14th inst., at the rooms of the Society, 17, Victoria-street, Westminster, S.W. The chair was occupied by Mr. Samuel Herbert Cox, President. The following gentlemen were duly elected by ballot as the Council and Officers for 1897, viz.:—As President, Mr. G. Maxwell Lawford; as Vice-Presidents, Messrs. W. Worby Beaumont, J. Corry Fell, and Henry O'Connor; as ordinary members of Council, Messrs. J. Patten Barber, Joseph Bernays, George Burt, D. B. Butler, H. S. H. Farrar, Percy Griffith, Charles Mason, and Stephen Sellon; as hon. sec. and treasurer, Mr. Perry Fairfax Nursey; as hon. auditors, Messrs. Alfred Lass, F.C.A., and Samuel Wood, F.C.A. The proceedings were terminated by a vote of thanks to the President, Council, and Officers for 1896, which was duly acknowledged by the President. The forty-third annual dinner was given at the Holborn Restaurant, on the 16th inst. The President, Mr. Samuel Herbert Cox, occupied the chair. After the usual toasts of "The Queen," "The Prince and Princess of Wales," and "The Navy, Army, and Auxiliary Forces," the President, in reply to the toast of the evening, viz.:—"Success to the Society of Engineers," alluded to the antiquity of the Society, which was founded in 1854, and said, that although old age did not invariably carry honours with it, he thought the Society was as well preserved and as capable of doing as good work now as in the heydey of its youth. A study of the transactions showed that there was no falling off in the quality of the papers, and all would agree that, so far as the discussions on the papers were concerned, the difficulty was, not to find those who were ready to express their opinions, but to enable every one who wanted to speak the opportunity to do so in the limited time at disposal. During the past year the usual vacation visits had been paid, and the Society had to express its thanks to those who had so kindly received them. The first visit was to the Dock Extension works, and machinery for discharging grain at the Surrey Commercial Docks, Rotherhithe. The second to the M.S. & L. Railway at Rugby. The third the Westinghouse Brake Company's Works, and the Midland Railway Goods Depot, Somers Town. He regretted that owing to absence from England he had unfortunately been unable to attend these visits, and expressed his thanks to Mr. Maxwell Lawford, the President-elect, for having attended to his duties during his enforced absence. He stated that the Society was so well organised, and possessed such a tower of strength in their Secretary, Mr. Pryce Cuxson, that the temporary absence of a President appeared to have very little effect upon its welfare.

FREE CHURCH, MILNGAVIE, STIRLING.—This church was formally opened on the 8th inst. The church is on a rectangular plan, with a tower at the south-east corner 48 ft. high, with a bell-chamber in the upper part, having a slated octagonal roof 15 ft. high. The area is seated for 384 and the gallery for 92, being a total of 476. The estimated cost of the church and hall is some 3,000*l*. Messrs. Campbell Douglas & Morrison, Glasgow, were the architects.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, Sir Arthur Arnold, Chairman, presiding.

Loans.—On the recommendation of the Finance Committee it was agreed to lend the St. Martin's Vestry 10,800*l.* towards the cost of the Green-street improvement, the St. Pancras Vestry 6,540*l.* for an electric light installation at Stanhope-street, and the Shoreditch Vestry 2,500*l.* to defray the cost of constructing an underground convenience.

The late Manager of Works.—The General Purposes Committee pointed out that the Council on the 17th ultimo resolved that the services of Mr. T. Holloway should be dispensed with as from December 1, 1896. It would be remembered that the Council, on the 1st instant, after considering the recommendations of the Works Committee that certain subordinate officials of the Works Department should be at once dismissed, resolved that the services of those officials should be dispensed with on the 1st instant, and that their salaries should be paid up to January 1, 1897. The Committee thought a similar course should be adopted with regard to the salary of the late manager, and they accordingly recommended —"That Mr. Holloway, the late manager of the Works Department, be paid up to and including January 1, 1897."

Mr. Goulding, M.P., opposed the recommendation, remarking that in his opinion Mr. Holloway was chiefly responsible for the irregularities that had taken place.

The recommendation was defeated by a large majority.

Occupation of newly-built Houses.—The adjourned report of the Public Health Committee in reference to the occupation of newly-built houses (see our last issue, page 491) was agreed to after a brief discussion.

Boundary-street Scheme—Iffley-buildings.—The following recommendation of the Housing of the Working Classes Committee was agreed to:—"That the estimate of 4,116*l.* submitted by the Finance Committee, and the plans, specification, and bills of quantities in respect of Iffley-buildings, Boundary-street area, be approved, and that the Housing of the Working Classes Committee be authorised to invite tenders for the erection of the buildings."

Seventh Asylum—Horton Manor.—The adjourned report of the Asylums Committee was as follows, the recommendation being agreed to:—

"On February 4, 1896, the Council authorised the Committee to obtain a site and to proceed with the erection of a seventh asylum. Pursuant to this authority the Horton estate of 1,060 acres has been purchased and duly reported to the Council. On the 27th ultimo the Council referred it to us to consider and report as to adopting a better and less expensive method of housing and treating lunatics. We have regarded this resolution as bearing upon the provision of the eighth asylum, which will also be erected on the Horton estate, and a special subcommittee has been appointed to consider and report upon the reference. From time to time reports have been made to the Council in reference to the serious deficiency in the asylum accommodation of the county, and with a view to stave off immediate difficulties, temporary buildings for 300 male and 300 female patients at Banstead and Colney Hatch asylums respectively have recently been erected. Similar buildings for 400 female patients at Hanwell have also been authorised. In a recent report to the Council we pointed out that including the temporary accommodation already erected and that proposed (at Hanwell and Horton), and presuming that the sixth asylum at Bexley and the seventh asylum at Horton were then completed, we should have, on January 1, 1901, that is, in four years' time, with an expected increase of at least 600 lunatics per annum, scarcely sufficient accommodation to meet the demands. It must not be lost sight of that the temporary accommodation has only been approved by the Home Secretary on the condition that its occupation is limited to five years. With this knowledge, and having due regard to the extreme urgency of the matter, our chief desire has been to erect the seventh asylum at Horton with the least possible delay. We have therefore considered it desirable to utilise the plans of the Heath Asylum, Bexley, for the seventh asylum at Horton. This will afford a considerable saving of time, as the Commissioners in Lunacy have signified their willingness to recommend the Home Secretary to approve these plans, and very slight alterations and modifications of the plans and bills of quantities will be required. We propose to appoint Mr. Hine to act as architect for the asylum, and in consideration of the Heath plans being reduplicated he will accept an inclusive remuneration of 5,750*l.* for the preparation of plans and the supervision of the work, his commission for the Heath Asylum being 10,000*l.* Within a very short time of the Council authorising the expenditure it will be possible to commence the erection of the building. The grant for the Heath Asylum, Bexley (exclusive of site and furnishing) was 350,000*l.*, but it is probable that the cost of the Horton asylum will exceed this sum, as the subsoil is not so favourable, and the cost of bringing the building materials on to the site will be greater. We do not, however, intend at present to ask the Council for more than 350,000*l.* We further propose to invite tenders for the foundations of the asylum on the plans being approved by the Home Secretary. We accordingly recommend—'That the estimate submitted by the Finance Committee for the erection (not including equipment) of a seventh asylum at Horton Manor, amounting to 350,000*l.*, be approved.'"

Heath Asylum, Bexley.—The same Committee reported that they had received a letter from Mr. H. Lovatt, whose tender for the superstructure (1st section) was recently accepted, stating that there was a clerical error on page 10 of the bricklayer's bill, the item being 14,465 ft. super of glazed white brick facing, and projecting ¼ in. for plastering. The price was extended at ¼d, (15*l.* 1s. 4d.) instead of 1s. 4d., and should have been 964*l.* 6s. 8d., and he therefore asked that the error might be amended in his favour. The Committee had ascertained that the mistake was discovered by the Council's quantity surveyors in checking Mr. Lovatt's bills, the total of which had to correspond with the contract price; and further, that had the price been against the Committee, the contractor would have been required to deduct it from the amount of his tender. The Committee were of opinion that it was only just and equitable to grant Mr. Lovatt's application, and this involved the increase of his tender of 91,879*l.* by 949*l.* 5s. 4d., making it in total 92,828*l.* 5s. 4d., which would still be considerably below the amount of the next tender, viz., 95,000*l.* They accordingly recommended "That Mr. Lovatt be allowed to amend his tender for the first part of the Heath Asylum, by increasing it from 91,879*l.* to 92,828*l.* 5s. 4d."

This was agreed to after an amendment to refer the matter back had been defeated.

Regent Theatre, Deptford.—The adjourned report of the Theatres and Music Halls Committee contained the following paragraph, the recommendation attached to which was agreed to:—

"The Council on November 24 last disapproved of nine drawings, dated November 12, 1896, which were submitted on behalf of Messrs. Hardie, Von Leer, and Gordyn, for a new theatre in the New Cross-road, Deptford, to be called the Regent Theatre, because the site of the proposed building was unsatisfactory. The applicants have since been in negotiation with the Vestry with a view to the latter undertaking a public improvement in the locality, which will greatly improve the site of the proposed building, by converting Watson-street, which is at present a *cul-de-sac*, into a thoroughfare. To the cost of this improvement the projectors of the theatre are prepared to contribute, and we understand there is a reasonable prospect of its being effected. Watson-street, to which the proposed theatre will have a frontage of 177 ft., will then have an outlet into Douglas-street, and although after passing the theatre it varies in width from 26 ft. to 30 ft. 7 in., we are of opinion that the applicants' proposal to widen the 5 ft. public footway at the rear of the theatre between Watson-street and Charles-street to 17 ft. may be fairly considered to make up for this. The suggested improvements are shown on an amended drawing, dated November 26, 1896, of the site which has been since submitted to us. We have already reported that the arrangement of the building itself is satisfactory, and we therefore recommend—'That the nine drawings, dated November 12, 1896, be approved, subject to the improvements to the site shown on the drawing, dated November 26, 1896, being carried out, and on condition that the works be commenced within six months and be executed in all respects in accordance with the Council's regulations and the provisions of the London Building Act, 1894, and that upon our reporting the completion of the building in accordance with the approved drawings and the above conditions, a certificate under the Metropolis Management and Building Acts Amendment Act, 1878, be sealed and issued to the owners.'"

District Surveyors—Proposed amalgamation of Districts, &c.—The Building Act Committee reported as follows, the recommendations being agreed to:—

"We reported on October 6 last that two district surveyorships were vacant, the one through the resignation of Mr. Robert Walker (who has since died), and the other through the death of Mr. W. Smallpeice. The duties in these two districts, which are (*a*) St. Martin-in-the-Fields and St. Anne, Soho, and (*b*) East Hampstead, have been temporarily discharged by Mr. C. F. Hayward and Mr A. Ashbridge, the respective surveyors for districts adjoining; and we have had under consideration what course it would be advisable for the Council to take with regard to the vacant districts. We think it desirable that all the district surveyors should hold their appointments subject to the conditions laid down by the Council, which, *inter alia*, preclude a district surveyor from carrying on any private business. In order to effect this, but at the same time to obtain the services in these positions of gentlemen of some standing, it appears to us to be necessary that the districts should be so arranged as that the income from each should be a substantial amount. As regards the district of St. Martin-in-the-Fields and St. Anne, Soho, the income from which in the year 1895 was 333*l.* 7s. 5d., we think that the best arrangement would be to amalgamate that district with the adjoining district of St. Giles and St. George, Bloomsbury, of which Mr. Hayward is the surveyor, the income from which last year was 647*l.* 15s. The gross income from both districts would approach 1,000*l.* a year, and Mr. Hayward has expressed his willingness to accept re-appointment to the amalgamated district on the Council's conditions, with the exception of that providing that a district surveyor shall, if required to do so, retire on attaining the age of sixty-five. Mr. Hayward has just attained that age, but he is capable and active, and personally discharges the duties in his present district, and, moreover, is a man of distinction in his profession. We think, therefore, that, in the circumstances, the Council would do well to make an exception in his case. We accordingly recommend:—(*a*) That the present districts of (*a*) St. Giles and St. George, Bloomsbury, and (*b*) St. Martin-in-the-Fields and St. Anne, Soho, be united and designated the district of Bloomsbury, St. Martin-in-the-Fields and Soho. (*b*) That upon Mr. C. F. Hayward formally resigning his present appointment and signing the declaration approved by the Council, with the exception of the provision as to retirement at the age of sixty-five, he be appointed District Surveyor for the district of Bloomsbury, St. Martin-in-the-Fields, and Soho. With regard to the district of East Hampstead, the gross income from which in the year 1895 was 445*l.* 0s. 9d., we propose that this district should be amalgamated with that of North-west Islington, North St. Pancras, and Clerkenwell (detached), of which Mr. F. Hammond is the district surveyor, and the gross income from which in 1895 was only 195*l.* 18s. The gross income from both districts would probably be somewhat less than 650*l.* a year; and we think that as Mr. Hammond, who has held his office since 1880, is willing to accept re-appointment to the amalgamated district on the Council's conditions, the arrangement we propose would be equitable. We therefore recommend (*a*) That the present districts of (*a*) East Hampstead and (*b*) North-west Islington, North St. Pancras, and Clerkenwell (detached) be united, and designated the district of East Hampstead, North-west Islington, North St. Pancras and Clerkenwell (detached). (*b*) That upon Mr. F. Hammond formally resigning his present appointment, and signing the declaration approved by the Council, he be appointed district surveyor for the district of East Hampstead, North-west Islington, North St. Pancras, and Clerkenwell (detached)."

London County Council (Sewerage and Drainage) Bill.—The Parliamentary Committee recommended, and it was agreed, "That the London County Council (Sewerage and Drainage) Bill in the amended form, as now circulated, be approved, with such further necessary alterations (if any) as the Parliamentary Committee may consider desirable."

Special Committee on the Works Department.—This Committee reported as follows:—"The order of reference from the Council instructed us to appoint two assessors, and we have to report that, in accordance therewith, we have elected Mr. Edwin Waterhouse, member of the Institute of Chartered Accountants, to be one of our assessors. With regard to the second assessor, we requested the Presidents of the Royal Institute of British Architects, of the Institution of Civil Engineers, and of the Surveyors' Institution, to recommend to us gentlemen duly qualified for the position of second assessor, and on the recommendation of the President of the Royal Institute of British Architects, we have elected Mr. E. A. Gruning, F.R.I.B.A., to be the second assessor. The Committee having obtained from the Council power to examine witnesses, the inquiry becomes under the standing order an open inquiry, unless the Committee shall otherwise order. The Committee have made no order, and arrangements have been made for the convenience of the Press so far as the accommodation at the disposal of the Committee will permit."*

The Tramway Question.—The whole of the remainder of the sitting, until 9 45, was devoted to a debate on the purchase of the Northern Tramways. Purchase was decided upon last week,

* See our report of the first day of the inquiry, p. 522.

and now it was resolved to lease the lines to the North Metropolitan Company for fourteen years at a rental of 45,000*l.* per annum, and in addition 12½ per cent. on the increased receipts over those of 1895. A number of amendments with regard to the hours of labour and wages of the employees, proposed by Progressive members, were rejected.

The debate had not been concluded when the Council was counted out, having sat continuously for seven hours.

THE LONDON COUNTY COUNCIL SCANDAL.

THE Special Committee of the London County Council, appointed to inquire into the organisation of the Works Department, met on Wednesday afternoon at Spring-gardens—Sir Arthur Arnold, chairman, presiding. The Committee consists of Sir G. Lushington, Dr. Collins, Mr. R. M. Beachcroft, Mr. Davies, Mr. W. H. Dickinson, Mr. J. S. Fletcher, Dr. Longstaff, and Mr. A. M. Torrance.

The Chairman having announced that Mr. E. A. Gruning, F.R.I.B.A., and Mr. E. Waterhouse, M.I.C.A., had been appointed assessors, said that they proposed to examine that afternoon their Engineer, Mr. A. R. Binnie, who had presented a long statement on the work of the Engineers' Department.

Dealing with the quality of the work executed by the Works Department, Mr. Binnie stated, in his report, that in the case both of large and small jobs it was equal to anything done by contractors. It was not better, but on the other hand it was not worse, and he could conceive that, should the Department be continued in the future, upon proper lines, the quality of the work might, without any additional cost to the Council, be made to excel that executed by contractors. Before the initiation of the Department he had looked forward to its success with considerable apprehension, and he was bound to say that the result was much more favourable than he would have anticipated. His general impression was that the work had been done at a lower rate than if executed by contractors, but he admitted that he had not the means of judging with exactitude.

Mr. Binnie, in answer to questions put by the Chairman, said that in his statement he had given a list of forty works, for which his total estimates were 1,333,711*l.*, and the tenders accepted amounted to 1,242,305*l.* He gave that table to show that his estimates were made with care, precision, and success. One of the first works executed directly under his supervision by the employment of direct labour was the York-road sewer at Lambeth, in 1892. His estimate for that work was 7,000*l.*, and the average of the tenders received was 11,598*l.* In his estimate he had made suitable provision for the risks incident upon sewer work, and he attributed the difference between his estimate and that of the tenders to the fact that contractors at the time were unduly frightened with the labour clauses which were then under discussion by the Council. The Council, finding that the lowest tender was 4,000*l.* in excess of his estimate, decided to undertake the work by direct employment of labour, before the Works Department was founded, and the result was that the work was executed for about 5,000*l.*—for 5,163*l.* 3s. 9d. Another work, which was carried out by the Works Department, was the Hackney and Holloway storm relief sewer, for which his estimate was 14,052*l.* In that case the contractors who tendered came much nearer than in the case of the York-road sewer work. The Committee recommended that one of the tenders be accepted, subject to the labour clause, but the contractors would not undertake the work on those conditions. Therefore the work was carried out by the Works Department, and for the sum of 8,050*l.* 14s. 8d. The Council's system was that when a Committee desired to employ the Works Department, it must resolve to execute the work without the intervention of a contractor. His estimates, prepared in just the same manner for the contractor, were forwarded to the Works Department. He saw great objection and difficulty in altering that system and getting the Department to compete directly with the contractor for the execution of work—though in a short time they would not get contractors to tender at the figures which the Department would be prepared to carry out the work. The jobbing work done by the Department had been done for 10 per cent. less than what he thought any contractor would tender for. He thought there should be at the head of the Department a manager whose duty would be of an administrative character over the whole of the works. The manager should have under him two principal subordinates—a manager of the outdoor works, going from work to work and seeing that each was properly carried out; there should also be another assistant acquainted with the prices at which materials could be purchased, and of the kinds which would be used by the Committee. He considered that a great improvement would be made if the Works Department, the Engineers' Department, and the Architects' Department, worked more together. Hitherto the different departments had been regarded from a "watertight-compartment" point of view. In his opinion, all the Departments ought to work together with the object of obtaining the very best work at the lowest possible prices. As to the control exercised by the Council, he considered that the Works Committee was far too numerous. He could not conceive any contractor carrying on his business by a committee of fifteen gentlemen, none of whom were compelled to attend, and any of whom could upset the success of the whole work. Men did not work for municipal employers as they did for private contractors, and he thought that that must be acccepted as inevitable. The men had always done good, honest work, and if a little more discretion were placed in the hands of the executive officers they could easily increase the work of the men. He thought it an advantage for the Council to be its own insurer, and he saw no reason for opposing the establishment of a Works Department. The quality of the work hitherto executed had been uniformly good—quite as good as contractors would execute it. He knew of no bad work executed by the Department. The matter of check on the Department did not concern his Department. It was a matter of control. He suggested that monthly there should be forwarded to the Committee a form of register which compared, month by month, the estimated cost of each item, the quantity executed, and that of the original estimate, so that, quite regardless of the whole amount of the estimate, the engineer in charge could always detect if there was an excess of expenditure on any particular item.

Sir Godfrey Lushington then took the witness through a detailed analysis of his list of works, the witness agreeing with Sir Godfrey that after all additions and deductions had been made, the Department had completed its works at an average cost of 90 per cent. of the estimates, and contractors 93 per cent. This showed a balance in favour of the Department, but the profit of the Department arose chiefly on certain special classes of work. The saving of the Council on the sewers to which the witness had alluded was on the prices in the bill of quantities, and had nothing to do with the sum set apart for contingencies, which was not used at all.

Sir Godfrey Lushington said that the contractor made a charge for contingencies, and if they did not arise he saved the money, but would probably have to apply that profit to the loss on another job. But when the Department executed a job without the contingency money being needed, there was just the same probability that the saving might be eaten up by loss on a subsequent job. The provision money for contingencies was therefore part of the average cost, and ought to be added.

Mr. Binnie said he could not see why, if the Council actually saved the money, it should be added to the cost. Before the Works Department was formed he had grave doubts whether it would work more cheaply than contractors, but the general result of its operations had been to remove that misgiving.

Sir Godfrey Lushington: Do you think the Department would be capable of undertaking a large work, say, like a sewer costing 2,000,000*l.*?—I think that is exactly the kind of work which a public body could do to the greatest advantage.

By Dr. Longstaff: There were many difficulties as to supervision in sewer works, and that class of work was more suitable for direct work by a public body. On the other hand, they had the splendid example in sewer work set by the late Metropolitan Board of Works, and that was carried out by contract. He had had much experience at Bradford in regard to waterworks, and he had there a very free hand. A large committee was not an improvement on a small one of two or three, and appeals from workmen to a committee were not an improvement. He had had appeals made against his decisions in the Council work which had resulted in his favour, but such appeals interfered with discipline. He only knew the Works Committee as a business committee. He had heard stories as to members of the Committee visiting the works, but they were only stories. In his opinion the Works Committee should not consist of more than five or six members, and they should have wider powers. The manager of the Works Department must have the confidence of the Council and wide powers of discretion. The manager should have the power of dismissal without appeal, and the functions of the Committee and the officers should be defined and kept apart. The work of the Committee should be to guide matters of policy, and the less interference it had with details the better.

By Alderman Beachcroft: In certain cases and under proper conditions he supported direct work by the Council. As to a small Committee, he was aware that the Council was elected, and there was the difficulty as to members on the Works Committee not continuing to be members of the Council. The Council's labour conditions shut out some of the best contractors. He appreciated the difficulty that, where the Committee was a very small one, all its members might fail to be re-elected.

By Mr. Torrance: He felt that with a properly-organised Works Department the prices of work would be so low that it would be impossible to get contractors to tender. If they noted the absurdly low prices at which some contractors tendered, they would understand why he would not approve of the Department competing with them.

In reply to Mr. Fletcher, he said it would be invidious for a great public body to engage in such competition.

Don't you think it would be a good arrangement if, before the Chairman of the Council opened the contractors' tenders, the Department should be allowed to place one in his hands?—No; I think it would be unwise.

Then you attach more importance to the dignity of the Council than to the interests of the ratepayers, whose servants we are?—No, I do not. My object has always been to get the best work done at the lowest figure, and if you place the Department in the position of competing with the contractors, I don't think you will attain that object. It should be remembered that the best contractor is continually trying to make money in every possible direction. In the case of the Department there is no incentive to scamp the work.

But if you find out that a contractor is scamping his work, you have the power to make him do it over again properly, and he has to bear the cost?—Yes, of course he runs the risk of detection.

By Dr. Collins: He was not aware that there had been any "convenient liberality" taken in framing his estimates in favour of the Works Committee as against the contractors. If the Works Department had to compete with the contractors they would have to stand on their own bottom and have a separate banking account. In underground work it would pay municipal bodies to carry it out themselves, even at rather over the market prices. The Works Department could well carry out large sewage works involving 2,000,000*l.* by direct work. Liverpool carried out its waterworks by direct work rather than trust it to contractors.

By Mr. Dickinson: Before the Works Department was established the Council did some of its own work because the tenders from contractors were very wild. He himself had not been hopeful of the Works Department when first instituted, but he thought differently now.

The Committee then adjourned until Friday.

APPLICATIONS UNDER THE 1894 LONDON BUILDING ACT.

AT the meeting of the London County Council on Tuesday last the Building Act Committee reported that they had considered the undermentioned applications under the London Building Act, 1894, and had arrived at the following decisions. Those applications which have been agreed to are granted on certain conditions:—

Lines of Frontages.

Lewisham.—That consent be given to the erection of one-story shops in front of three buildings on the north side of Ladywell-road, between No. 17 and Wearside-road, on the further application of Mr. C. Story, on behalf of Messrs. G. R. and C. C. Story.

Peckham.—That consent be given to the erection of a three-story building on the north side of Hanover Park, Rye-lane, on the further application of Messrs. H. Jarvis & Son, on behalf of Messrs. Jones & Higgins, Limited.

Space at Rear and Height of Buildings.

Kensington, South.—That the Council, in the exercise of its powers under Section 41 (1) (vi.) of the London Building Act, 1894, do not allow a modification of the provisions of that section with regard to open spaces about buildings, so far as relates to the proposed erection of a block of residential flats from three to five stories in height on the north side of a footway between Lexham Gardens and Cornwall Gardens Mews, with an irregular space at the rear; and that consent be not given to the erection of the proposed flats with a portion thereof exceeding in height the width of the said footway, on the further application of Mr. A. G. Wyand, on behalf of Mr. S. J. Wyand.

Height of Buildings.

City of London.—That consent be given to the erection of a building on the south side of Tallis-street, at the corner of Carmelite-street, to exceed in height the width of each of those streets, on the application of Messrs. Robertson & Ellis, on behalf of Messrs. Harmsworth Brothers, Limited.

Open Space about Buildings.

Rotherhithe.—That the Council do, in the exercise of its powers under Section 41 (1) (iv.) (a) of the London Building Act, 1894, permit the erection of a building exceeding 16 ft. in height upon the open space at the rear of No. 36, Clarence-street, on the application of Mr. E. Crosse, on behalf of Mr. G. S. Bayley.

Whitechapel.—That the Council, in the exercise of its powers under Section 41 of the London Building Act, 1894, do not permit the erection of a dwelling-house with shop on the ground floor, on the north side of Pelham-street, at the corner of Hunt-street, with an open space at the rear, on the application of Mesrs. Davis Brothers.

THE POST OFFICE LONDON DIRECTORY.

"THE Post Office London Directory, 1897" (London: Kelly & Co., Limited), is the ninety-eighth issue of this well-known and highly-valued compilation. The Directory once again shows an increase in size, and the present edition consists of 3,054 pages, exclusive of advertisements, which is an increase of 52 pages on the last issue. The issue has been revised up to date, in illustration of which we may point out that the name of Sir E. J. Poynter, President of the Royal Academy, who received the honour of knighthood on November 25, is inserted, with his new rank, under the Royal Academy of Arts, the National Gallery, and the Court division. Again, the name of the late Secretary of the Institute of Architects has been omitted from the list of the officials of the Institute in the "Trades" (!) section. The Directory is a unique compilation, which has become indispensable in all business offices. The map which accompanies the volume has been corrected up to date.

Correspondence.

To the Editor of THE BUILDER.

VENTILATION OF MARISCHAL COLLEGE, ABERDEEN.

SIR,—In last week's issue, page 501, I observe that you have a paragraph under this heading referring to my work there. May I hope that you will spare me space in this week's issue to refer to same.

There have been no difficulties in the matter of applying my methods of ventilation and warming to these very extensive buildings other than what reasonably might have been looked for while introducing mechanical ventilation to buildings after they had been erected without previous provision having been made for appliances and air shafts.

Regarding the chemical department, all that I had proposed to do had been accomplished. My ideas, however, had not been sufficiently advanced for the Professor for this department, as my provision for twenty to thirty renewals of the air per hour within the fume chambers were considered by him totally inadequate.

I give him all the credit, as the originator of the suggestion, that provision should be made whereby 250,000 cubic feet of air per hour will pass through these fume chambers within his practical classroom, the rate of renewal of the air through them being thus accelerated so as to reach the enormous number of 1,200 times per hour.

This I can easily do by my method, while by no other method can this be done without creating within the classroom unbearable draughts. Not the slightest draught will be experienced in these classrooms. The Professor stated that it was admitted that these chemistry classrooms at this university are the finest in the world, and I humbly claim that there will be no better ventilated fume chambers nor chemistry classrooms than these are in the world.

WILLIAM KEY.

STRUCTURES OVER THE EAST ENDS OF ENGLISH CHURCHES.

SIR,—Your correspondent, Mr. Thompson, is surprised that the remarkable building over the east end of Christ Church Priory, Hants, was not mentioned in the article upon "Structures Over the East Ends of Some English Churches."

Mr. Thompson has overlooked the fact that all mention of buildings which were used as chapels or chantries was purposely omitted from the article, because their uses in such cases are obvious. And I think there can be no doubt that the interesting building over the Lady Chapel at Christ Church was an upper chapel. For the same reason no mention was made of the upper chapel or oratory in the cloisters of St. Stephen's, or of that over the chapel in the cloisters of Winchester College.

THE WRITER OF THE ARTICLE UPON "STRUCTURES OVER THE EAST ENDS OF SOME ENGLISH CHURCHES, &C."

SUTTON ST. EDMUND'S SCHOOL BOARD COMPETITION.

SIR,—Having seen the advertisement in last week's issue of the Sutton St. Edmund's School Board, and their magnanimous offer of "nothing for something," we think perhaps a few comments to intending competitors may be welcome, although we doubt if any architects of any standing whatever will compete under the present absurd conditions.

1. No premiums whatever are offered.

2. No assessor or person competent to judge of the respective merits and demerits of the designs is appointed; but our profession is asked to spend its time, worry, scheme, plot, and plan, and then trust itself to the incompetent critique of the Board itself, which is composed of a clergyman and "tillers of the soil," who are, with few exceptions, incapable of distinguishing between a plan and section.

3. Sutton St. Edmund is situated in the fens, at least four miles from any railway station, and far from any town; yet these gentlemen wish an architect to plant himself in this out-of-the-way hole, at their beck and call, without reimbursing him for out-of-pocket expenses.

4. Although the extras may be considerable, and the variations occupy much time and skill in balancing, yet no charge for this extra work will be allowed; but the sum of 5 per cent. on 900*l.*, or thereabouts, must include everything, and probably they will demur to pay quantity surveyor's charges.

L. & .

BUILDING CONTRACTS.

THE following printed letter is being circulated by the Institute of Builders, in regard to their policy on this subject:—

"31 and 32, Bedford-street, Strand, W.C.,
London, December 16, 1896.

DEAR SIR,—During the last few months, several inquiries have been made at this Institute with reference to the new form of contract recently issued by the Royal Institute of British Architects, and I am directed to give you the following information on the subject.

In the year 1890 the Royal Institute of British Architects desired to arrange with this Institute a new form of contract to supersede the form settled between the architects and builders in 1871, and which has since that time been in constant use.

The builders were not anxious for any alteration in the old form, as it was well understood by both architects and builders, but at the instance of the architects they discussed the form of contract submitted to them, and the negotiations extended over a period of some four or five years.

This Institute, with a desire to meet the views of the architects, reluctantly assented to adopt the phraseology upon which the architects laid great stress in various portions of the contract, expressly on the condition that the arbitration clause should be framed in a mode approved by this Institute; and on this footing the negotiations proceeded.

When the time came for settling the arbitration clause, this Institute were advised by Sir Richard Webster and Mr. A. A. Hudson that the form of arbitration clause which the architects after long discussion required the builders to accept would not give the builders the protection they required, and that they should, therefore, decline to adopt it. The architects, however, were equally determined not to adopt the arbitration clause in the form the builders were advised was necessary for their protection, and thereupon the negotiations were broken off.

The architects have since issued a new form of contract without the approval of the Institute of Builders, and which, indeed, the builders are advised if used at all should only be with an arbitration clause in the form the builders were willing to agree to.

This Institute, therefore, repeats the advice and recommendation they gave after the negotiations had broken off in 1895, viz.:—That the old form of conditions agreed between the architects and builders in 1871, and which are so well known in the trade, should be used as the standard form.

They do not recommend the use of the new form of contract put forward by the architects, except with the arbitration clause, in the form the builders are advised is effectual.

Copies of the arbitration clause recommended can be obtained at these offices.—I am, dear sir, yours faithfully, R. S. HENSHAW, Secretary."

The Student's Column.

RURAL DRAINAGE.—XXV.

DRY METHODS OF SEWAGE DISPOSAL.

IT has been pointed out that the suspended organic matter in water-carried sewage consists principally of fæcal matter, and constitutes the chief difficulty in efficient disposal. The solid excreta may be taken on an average as amounting to 4 oz. per head per day. Assuming the total amount of the sewage at twenty gallons per head per day, the solid excreta only forms $\frac{1}{800}$th part. The main object of the chemical treatment of water-carried sewage is to extract this solid excreta, in order that the remainder, or liquid portion, of the sewage may be properly treated. The excreta, which before dilution possessed considerable manurial value, after separation by precipitation becomes of very little value. The system of water carriage and subsequent chemical treatment, from this point of view, is analagous to intentionally losing a needle in a haystack, and then with much labour recovering it—rusty.

Where possible, prevention is undeniably better than cure, and if the solid fæcal matter can be excluded from the sewage in the first instance without causing a greater difficulty in another direction, such a system must be the best. This method of "interception" has been practised in many ways, *e.g.*, privies, ash-pits, middens, cesspools, pails, troughs, the "Rochdale," the "Eureka," the "Goux," Fosses Permanentes, Fosses Mobiles, and Moule's; Taylor's and Phillip's earth-closets. Wherever these methods are in use they are, when possible, replaced by the water-carriage system, under the prevailing impression that "the collection and disposal of the mass of excrement under these dry systems is found to be a very troublesome matter, and they are at their best but inferior substitutes for water-carriage, nor must it be forgotten that sewers and drains are necessary even if a good interception process is in force."—"The Municipal and Sanitary Engineer's Handbook," by H. P. Boulnois, M.Inst. C.E., p. 262.

The conditions of modern civilisation have unfortunately made systems of interception practically impossible in towns, on account of the difficulty and expense of collection without nuisance, and the distance of transit to the place of disposal. Popular feeling is usually guided by the results obtained in towns, and, without considering the total dissimilarity of the conditions, will condemn the employment of a method in a small village if such method has previously proved ineffectual in a large city like Manchester.

In the second chapter of this series of articles it was said that "the sewerage of a village is, therefore, mainly a question of the removal of slop-water, but the subsequent disposal of the sewage is principally dependent upon whether the 4 oz. of solid excreta and half-pint of urine per head have been included.

The excreta and remainder of the sewage, including the slop-water, if dealt with separately, can be removed, and subsequently disposed of, economically, without nuisance and without danger.

If combined, the processes become infinitely more difficult, and never entirely satisfactory. In towns, the disposal of excreta otherwise than by water-carriage has, unfortunately, become impracticable. In villages, however, the case is otherwise, and here, in most cases, the employment of water-carriage can only be designated as a short-sighted, wasteful policy, the result of indolent ignorance."—*Builder*, July 11, 1896.

That this is true is conclusively proved by the results of the admirable work carried out by Dr. G. V. Poore upon his property situated at Andover.

These results are scientifically and charmingly described in Dr. Poore's book, entited "Rural Hygiene," and from the particulars contained therein (with the author's permission), corroborated by a personal inspection afforded by the courtesy of Dr. Poore, the following is principally derived.

The experiments on a practical scale here referred to have been carried out upon an area of about 2 acres, containing a house, which is let for a girls' school, and about twenty cottages. The ground used for cultivation is about 1¼ acres, exclusive of paths and turf. This property was purchased by Dr. Poore in the winter of 1881-2.

The following are the principal steps which were taken for the improvement of the property, and to enable Dr. Poore's method to be carried out :—

"1. The demolition of the partition-walls between the back-yards of the cottages, and the provision of means of access and egress to these back premises for the purpose of scavenging.

2. The removal of nine water-closets, and the filling up of all the old privy pits, and the substitution for these of an arrangement of pails which might be used on the earth system.

3. The removal of the underground slop-drain and its replacement by an open gutter, made of Staffordshire brick, running from east to west—*i.e.*, taking the course of the natural slope of the ground.

4. The providing for the daily scavenging of the cottages.

The last measure has been the most important of all. A man was engaged as scavenger and under-gardener, whose duty it has been to remove the closet pails every morning and bury their contents superficially in the garden. For such a plan to succeed, it is essential that the removals should be daily, and the writer has elsewhere entered fully into the economic aspects of daily versus weekly removals.

The success of this plan has been complete.

1. There is no accumulation of fæcal matter near the cottages.

2. There is no dangerous conveyance of such matter for long distances, either by pipe or any other means, and the land for burial being close at hand, the daily cleansing of these cottages is effected easily and quickly, the whole process not occupying more than an hour. For the success of this plan it is essential that the cottages should be in close proximity to the land. They cannot be too close, while every yard of porterage adds to the expense.

3. All nuisance has been absolutely stopped. The cottages are kept clean, and the garden where the fæcal matters are buried is not made in the least unpleasant. The material is placed immediately below the surface—*i.e.*, just hidden by a layer of earth. The eye sees nothing and there is absolutely no odour. In fact, there is much less annoyance than is caused by ordinary dungings and mulchings.

4. The 'sanitary arrangements' of the cottages being of the simplest, the incessant dribble of money for the repair of closets, traps, syphon-bends, gullies, ventilator-pipes, &c., has ceased.

5. The fertility and beauty of the garden have been enormously increased, and its value, which was depreciated by its filthy surroundings, has probably rather more than recovered.

It may be well to state that the garden produces all the ordinary fruits and vegetables in a state of perfection which is clearly above the average. The improvement in its fertility has been steady and gradual from the beginning. When first occupied by the writer it had been neglected for about two years, and, as has been stated, it was so overgrown with weeds that the paths were scarcely recognisable."

"At the present time (and for some years past) the garden is receiving the daily scavenging of twenty cottages with an average population of at least one hundred persons. The area actually under cultivation amounts (exclusive of paths and grass) to about 1¼ acres. Not only is the excremental matter from these cottages removed to the garden, but the ashes as well."—"Rural Hygiene," p. 278.

The sanitary appliances in use are remarkable for their extreme simplicity. They are generally modifications of pre-existing forms, developed in accordance with the results of Dr. Poore's assiduous and acute experiments. In fact, their simplicity is a shock to the mind accustomed to the complicated and expensive machinery of the present day. Dr. Poore has incontrovertibly proved that his method is not only theoretically correct, but practically feasible under the conditions upon which he has tried it, and surely this is a great step. To large towns it is inapplicable; but even if its use is restricted to similar conditions the field to which it is applicable is an immense one. The method is so entirely in accordance with the action of nature that a careful observation of her processes followed by intelligent experimentation must inevitably indicate the steps necessary for adaptation in any case where "modern civilisation" is not too advanced. A brief description of the appliances employed on Dr. Poore's property at Andover will be given in the next chapter.

OBITUARY.

MR. W. H. BROOKE.—It is stated that the death has occurred of Mr. W. H. Brooke, architect and surveyor, of Bridgend.

GENERAL BUILDING NEWS.

WINTER GARDEN ON SOUTHEND PIER.—At the last meeting of the Southend Town Council the Pier Committee presented a long report. It dealt first with the proposed covered approach to the Pavilion, and the scheme submitted by Messrs. James Thompson & Greenhalgh, the architects, which has been accepted by the Council, and which provides for enclosing the entire decking from the toll-house to the pavilion. It was recommended:—(1) "That the above scheme be adopted and carried out under the supervision of the Committee at the estimated cost of 3,890*l.*, and that the provision of the cost be referred to the Finance Committee;" and (2) "That Messrs. Thompson & Greenhalgh be engaged to act as architects and to supervise the carrying out of the work." As it was proposed that the pavilion and the approach should be properly heated, so as to be fit for use during the winter months, and that a gallery should be constructed at the west end of the pavilion, the Committee further recommended that they be empowered to agree upon a scheme for these works at a cost not exceeding 1,250*l.* It was agreed to consider this and other pier matters at a special meeting to be called by the Mayor.

CONSTITUTIONAL CLUB, LINCOLN. — A new Constitutional Club has been opened at Lincoln. The premises are situated at the junction of Broadgate and Silver-street. The architect is Mr. Wm. Watkins, of Lincoln, and the contractor is Mr. M. Otter, of Lincoln. The terra-cotta came from Messrs. Edwards, Ruabon. The newsroom has a deal block floor, and the smokeroom, cardroom, and bar floor are of concrete, covered with wood laid in pitch and Stockholm tar. The grates and chimneypieces and tiles, except in the kitchen, are of Majolica, and have been obtained from Burmantofts, near Leeds.

CHURCH, HETTON-LE-HOLE, DURHAM.—A new church at Hetton-le-Hole is to be commenced next spring. The accommodation is for 576, and the cost will be probably about 3,500*l.*, allowing for present material, seating, &c. Mr. Stephen Piper, Newcastle, is the architect, and his plan was chosen in competition.

INFIRMARY SITE, NEWCASTLE.—Mr. Waterhouse, architect, London, called in as an expert by the governors of the Royal Infirmary, Newcastle, to report upon the suitability of the present site for a new infirmary, had an interview, on the 8th inst., with the committee appointed to consider and report on the subject. The expert received instructions to frame his report on the possibilities of the present site and ground available for a new infirmary.

IMPROVEMENTS AT ST. CLEMENT'S CHURCH, IPSWICH —Various alterations and improvements in this church have just been completed. The side galleries were removed in 1880; now the gallery at the west end has been taken away—the tower entrance being thereby thrown open—and the old font has been returned to its proper place in the baptistry, near the western door. In the east end of the church a new vestry has been provided for the accommodation of the clergy and the choir, and a new organ-chamber built. The Diocesan Architect (Mr. Bisshopp) prepared the plans of the work; the building operations were carried out by Mr. Fred. Bennett, and the cleaning by Mr. H. S. Orvis.

FREE CHURCH, GORBALS, GLASGOW.—It is proposed to erect a new Free church at Gorbals. The church, halls, and church officer's house, which will be situated on the east side of Abbotsford-place, will cost about 7,000*l.* Mr. J. B. Wilson is the architect.

WORKMEN'S HOUSES, PENMAENMAWR.—The erection of seventy workmen's houses for men employed at Messrs. Darbishire's sett quarries was commenced, on the 8th inst., at Penmaenmawr, the architect being Mr. Richard Davies, Bangor, and Mr. Erasmus Jones, Llanfairfechan, the contractor.

LITTLEWOOD MEMORIAL BUILDINGS, SHEFFIELD.—On the 7th inst. Mr. William Lewis Littlewood laid the foundation stone of a new building, which he is causing to be erected on a site next the Scotland-street Methodist New Connexion Chapel, Sheffield, and which is to be known as "The Littlewood Memorial." The building will include a café, a congregational hall to hold about 250 people, a ladies' vestry, and a caretaker's house, and the cost of it will be about 3,400*l.* Messrs. Flockton, Gibbs, & Flockton are the architects, and the contract is in the hands of Mr. William May, builder, of Crookes.

BUSINESS PREMISES, SHEFFIELD.—The Sheffield Estate Salerooms and Auction Mart have been erected in Church-street, Sheffield, by Messrs. W. Bush & Sons. The building has a frontage of 80 ft. to Church-street, and has been erected from the designs of Mr. T. H. Jenkinson, of Sheffield. Messrs. Ash, Son, & Biggin, of Sheffield, were the contractors for the building work.

WORKHOUSE INFIRMARY, WAKEFIELD.—The foundation stone of a new infirmary to be erected at the Wakefield Union Workhouse was laid on the 7th inst. by Mr. Tom Wordsworth, Chairman of the Board of Guardians. The architect is Mr. W. Watson, Wakefield. The new buildings, two stories in height, will be erected on a site of about three acres at the rear of the workhouse. The infirmary will consist of two pavilions about 186 ft. by 28 ft., with an administrative block midway between them, and communicating with them by open corridors. The distance of the pavilions from one another will be 130 ft., and from the administrative block 42 ft. The front of the building will face due south, and provision is made for a future extension of two pavilions on the east and west respectively. The buildings are planned to accommodate seventy male and seventy-eight female patients, a total of 148, and there will be large day-rooms, which could be used as sick wards when required. The administrative block will contain rooms for the surgeon and nurses, and waiting-rooms for males and females. A mortuary and disinfecting station will be erected on the eastern portion of the site, and a new laundry near the eastern boundary. The total estimated cost of the whole scheme, including the purchase of land, the erection of boundary walls, electric lighting, engine and boiler houses, furnishings, &c, is 36,000*l.*

BUILDING TRADES, STAFFORDSHIRE. — The building trades throughout the Staffordshire district are very busy, it is stated, for the time of the year. There are no carpenters and joiners out of work in the district. Bricklayers have a small percentage out. Labourers are still slack, a good number being out of work. Painters are not busy. At Leek the building trade is good, and the men who came out on strike at one job have found employment elsewhere without any trouble. At Stafford trade is moderate, joiners and bricklayers being fully employed; but painters and plumbers have a great many out of work. In Crewe all branches of the trade are well employed, there being none out of employment.

NEW LIBRARY, NEWCASTLE-ON-TYNE. — To commemorate the sixty years reign of her Majesty Queen Victoria, Alderman William Haswell Stephenson, J.P., has offered to erect a branch Library (to be called the "Victoria Library"), at the east-end of Newcastle-on-Tyne, somewhat similar to the branch at the west end, presented by him in 1895. The offer was unanimously accepted by the City Council, and plans are now in course of preparation by Mr. John W. Dyson, architect, of Newcastle.

EXTENSION OF GALASHIELS CO-OPERATIVE SOCIETY.—The Galashiels Co-operative Society (Limited), having purchased the property immediately to the eastward of their present premises, have resolved upon making a considerable extension. Their premises are situated at the corner of High-street and Roxburgh-street. When the extension, which runs eastward down High-street, is completed, the frontage will be 120 ft., with a depth of 92 ft., while the frontage along Roxburgh-street runs southward 96 ft. The architects are Messrs. J. & J. Hall, Galashiels.

CHURCH TOWER, CARDYNHAM, CORNWALL.—The parish church at Cardynham consists of a nave, chancel, with north and south aisles, a south porch, and the west tower. This tower was found to be seriously out of the perpendicular in the upper stage. From the pinnacles to below the sill of the belfry windows the walls were bulging outwards, the battlements leaning so much that they were expected to fall at any moment. After an examination of the tower, Mr. Edmund Sedding, architect, found that it was necessary to take the entire upper portion down to the ground and carefully rebuild it. This has now been accomplished.

CHURCH, LOWER EDMONTON.—The foundation-stone of the New Church of St. Peter the Apostle, Lower Edmonton, was laid recently. The work of erecting the new edifice is in the hands of Messrs. Goddard & Sons, of Farnham. Their contract price is 4,080*l.*, and the extent of the building to be carried out for that sum will be the erection of the four western bays of the nave and aisle in red and yellow brick with stone dressings, and green slate roof outside. Inside, the roof will be open-timbered, the bench seating accommodation will be for 500, the flooring will be of the builder's patent wood blocks, and the edifice will be heated on Grundy's hot-air system. The architects are Messrs. Newman & Newman, of Tooley-street.

CHURCH, NEWTON, OYSTERMOUTH. — A church is to be erected at Newton, Oystermouth, in memory of the late Miss Frances Ridley Havergal. It is understood that the plans for the new building will be prepared by Sir Arthur Bromfield.

RESTORATION OF TOWER, LEINTWARDINE CHURCH, HEREFORDSHIRE. — The restoration of the tower of this church has just been completed and dedicated. Messrs. Kelt, contractors, of Cambridge, have carried out the work of restoration in accordance with plans prepared by Mr. Atkinson, architect, also of Cambridge.

CHURCH OF ST. GABRIEL'S, WILLESDEN GREEN. — The foundation-stone of a permanent church in the district of St. Gabriel's, Willesden

Green, was laid recently. When completed, it will hold 950 people, the part now being built making provision for 600. The architect is Mr. Philip Day with Messrs. W. & C. A. Bassett-Smith, and the builder is Mr. J. Bentley.

HOTEL, MORECAMBE, LANCASHIRE.—A new Grand Hotel is being erected on the Calton Lodge Estate, Morecambe. The architects are Messrs. Maxwell and Tuke, of Manchester, who estimated the cost at 20,000*l.*

ADDITIONS, CHRIST CHURCH, KENSINGTON.—Christ Church, Victoria-road, a chapel of ease to the parish church of St. Mary Abbots, has recently been improved by the addition of a porch at the west end in place of the lobby, *i.e.*, under the (disused) west gallery. The latter has been removed, and the area it occupied thrown into the nave. At the same time a cross passage from north to south of the church at this end has been made by the removal of superfluous seats, as also space for a font of Caen stone, surrounded by an encaustic tile pavement, at the west end of the north aisle. All the work has been designed and arranged by Mr. B. Edmund Ferrey, F.S.A.

WESLEYAN METHODIST CHAPEL, SACRISTON, DURHAM.—It is proposed to erect new Wesleyan Methodist day and Sunday schools and a new chapel at Sacriston. The plans for the new schools have been prepared by Mr. H. T. Gradon, architect, of Durham, and the work will be carried out under his supervision. The building will be two stories in height. The infants' school will occupy the base of the building, and accommodation is to be provided for 160 scholars. In addition to the schoolroom there will be a vestry, kitchen, cloakrooms, and entrance vestibules, with internal staircases to reach the floor above. This will provide accommodation for 160 older children, and by means of two folding doors the room will be divided into three apartments. The schools are to be built of the Charlaw Company's bricks, with the exception of the facing next to the road, where Birtley facing bricks will be used. The schools will be heated by warm air ventilating grates. Mr. T. Hilton, of Bishop Auckland, is contractor. The scheme includes the erection of a chapel, which will be commenced on the completion of the school buildings. It is proposed to erect a chapel large enough to accommodate 400 worshippers. According to the present plans it will comprise a basement with a small end gallery to seat about fifty. At the other end will be the pulpit, organ loft, and choir seats. The cost of the whole scheme, it is estimated, will reach a total of 3,000*l.*

NORTH-BRITISH RAILWAY EXTENSIONS IN LEITH.—Sheriff Rutherfurd, in Edinburgh Sheriff Court, held an inquiry on the 9th inst. in regard to the proposal of the North British Railway Company to demolish property in Ferrier-street, Gordon-street, Leith-walk, and Duke-street in connexion with the making of the new line to Leith and the station at the foot of Leith-walk. It was stated that, as the result of a house-to-house inquiry, it had been ascertained that in the property which it was proposed to demolish, and which was occupied by the labouring classes, there were thirty-six separate buildings, in which there were 212 dwelling-houses, containing 543 apartments, with 909 occupants. Mr. Hamilton Beattie, architect, stated that the petitioners intended to erect four-story tenements, containing 215 houses, twenty-five being of four apartments, forty-six of three apartments, and 144 of two apartments, altogether 215 houses and 526 apartments, providing accommodation for 1,075 occupants, or about 10 per cent. more than the number that was to be displaced. These new houses were to be erected at Halmyre-street and Lorne-street, about 300 yards from the property which was to be demolished.

HOSPITAL LAUNDRY, COVENTRY.—During the past few weeks alterations have been made to the laundry at the Coventry Hospital. The old building has been converted into a steam laundry and has been doubled by the addition of four new rooms. The work was carried out under the supervision of the architect, Mr. H. W. Chattaway, Mr. C. G. Hill being the contractor.

PROPOSED CHURCH RESTORATION, BRADFORD.—The first meeting of the committee appointed in connexion with the proposed memorial to Archdeacon Bardsley, the late Vicar of Bradford, was held on the 11th inst. at the Church Institute, Bradford. Plans were submitted which had been drafted by Mr. J. L. Pearson, R.A., and Mr. E. Healey for the complete restoration of the Parish Church. It was ultimately determined to make an appeal to the townspeople for a sum of 12,000*l.*, which it is estimated will be necessary to carry out the work.

WESLEYAN CHAPEL, MUNDESLEY.—A site having been purchased for the new Mundesley Wesleyan Chapel, plans of the building have been prepared by Messrs. Eade & Johns, architects, Ipswich. Tenders have been sent in, and that of Mr. R. Eastoe, of North Walsham, has been accepted.

RECONSTRUCTION OF THEATRE, NEWPORT, MON.—The work of reconstruction of the Victoria Theatre, Newport, will shortly be commenced. Plans have been prepared by Mr. W. G. R. Sprague. It is proposed to utilise the existing walls in the reconstructed theatre. The wall facing Bridge street is to be reinforced by a brick wall built parallel with and at a distance of 10 ft. away from the portion between the proscenium wall and the back main division of the auditorium. The theatre is designed to accommodate an audience of 1,214 persons, distributed in the following manner:—Stalls, 54; pit, 500; dress circle, 86; balcony, 88; boxes, 36; gallery, 450; total, 1,214. The structure is divided in the usual manner, and includes stage, pit, stalls, dress circle, balcony, gallery, boxes, dressing-rooms, and the necessary offices.

RESTORATION OF WELLINGHAM CHURCH, NORFOLK.—After being closed for nearly three months for restoration, the Parish Church of Wellingham, dedicated to St. Andrew, was reopened recently. The restoration has been carried out from the designs and under the superintendence of Mr. H. J. Green, architect, Norwich, and the work has been done by Mr. W. Curtis, builder, Litcham.

PROPOSED THEATRE, DEPTFORD.—It is proposed to erect a new theatre at Deptford, from plans prepared by Mr. W. G. R. Sprague. The pit will be 75 ft. deep with a clear width of over 60 ft. The stage will also be of ample dimensions, giving a width of 75 ft., with a depth of 40 ft. Electric light from plant adjacent to the theatre will be supplied throughout the building.

EXTENSION OF PERTH ACADEMY.—The alterations and additions which have been made at the Perth Academy and School of Art, which were rendered necessary by the recent arrangements of the Science and Art Department, South Kensington, are now completed. The following are the contractors:—Messrs. Frazer & Morton, builders; Leith & Lumsden, joiners; Frew & Son, plumbers and heating engineers; G. R. Douglas & Son, painters; Mr. J. Buchan, slater—all of Perth; and Messrs. Alexander M'Ritchie, plasterers; Lowden Brothers, electric lighting—of Dundee. Mr. G. P. K. Young, of Messrs. J. & G. Young, architects, prepared the plans and personally superintended the alterations and extensions.

SANITARY AND ENGINEERING NEWS.

BRIDGE, BONHILL.—A meeting of the Dumbarton County Road Board was held recently for the purpose of considering the design for the new bridge at Bonhill submitted by Mr. Wm. Crouch, C.E., Glasgow, and recommended to the Board for adoption by the sub-committee. The design submitted is for a steel bow-string girder bridge, having a single span of 160 ft., a total width of 35 ft., and is estimated to cost 7,500*l.* On the motion of Mr. J. W. Christie, seconded by Mr. R. E. Findlay, the design was approved.

SEWERAGE SCHEME, STONE, STAFFORDSHIRE.—Colonel J. T. Marsh, R.E., Local Government Inspector, recently held an inquiry into an application of the Stone Urban District Council for sanction to borrow 5,000*l.* for works of sewerage and sewage disposal. Mr. G. C. Kent, of Longton, representing the two brewery firms in the town, submitted that the scheme was incomplete, inasmuch as it did not provide for the treatment of the brewery refuse, which, he argued, the Council was bound to receive. The only question was one of expense, and his clients, who paid one-fifth of the rates of the town, were willing to bear their share of the cost of treating the brewery refuse, but they declined to pay the whole cost of any private treatment. The details of the proposed scheme were laid before the inspector by the clerk and the engineer (Mr. McCallum, of Manchester).

DOCK WORKS, AVONMOUTH.—The Bristol Docks Committee, in their report to the Council, recently recommended the carrying out of works at Avonmouth in connexion with the Canadian traffic. The dimensions of the existing lock at Avonmouth will not admit of a vessel of greater length than 425 ft. to 430 ft. over all, and the Docks Committee instructed the engineer to submit plans and models showing two different methods of effecting the object in view. These are either by increasing the length of the lock 110 ft. by adding to the masonry of the walls, or by lengthening the lock by means of a floating caisson, working in a groove within the existing walls. The engineer considers the lengthening of the lock would be a more costly method as regards construction, and would be attended with risk as to the stability of the works, whilst the caisson would be cheaper and free from danger though not so convenient for working. Mr. Wolie Barry, C.E., on being appealed to, considered the only prudent method of effecting the desired end was by the latter means, and the committee accordingly recommend the Council to provide a caisson at a total estimated cost of 20,000*l.*

SEWAGE WORKS, HECKMONDWIKE.—On the 11th inst. Colonel Coke, one of the Inspectors of the Local Government Board, held an inquiry at the Heckmondwike District Council rooms respecting the Council's application for sanction to borrow 8,862*l.* on the sewerage and sewage disposal account and 6,027*l.* on the street improvement account and for the construction of new streets.

THE SANITARY INSTITUTE.—At an Examination in Practical Sanitary Science, held under the auspices of the Sanitary Institute, on December 4 and 5, the following fifteen candidates were granted Certificates in Practical Sanitary Science:—G. A. Allan, jun., London; S. E. Beeson, Rickmansworth; E. Berrington, Wolverhampton; H. A. Endsor, Stony Stratford; H. S. Higlett, Guildford; F. T. G. Hobday, Royal Veterinary College, Camden Town; D. E. Lloyd-Davies, Wolverhampton; A. Y. Mayall, Dartford; C. H. Mead, Sydenham; G. H. Smith, Dover; J. B. Smith, London; E. J. Strange, Tunbridge Wells; G. L. Sutcliffe, Heptonstall; H. A. Vine, London; A. R. Warren, St. John's, London.

WATERWORKS, FALKIRK.—On the 10th inst. the inauguration of new filters erected by the Falkirk and Larbert Water Trust in connexion with their works at Little Denny took place. The filters are two in number, and are each 80 ft. long by 45 ft. broad, and are 6 ft. deep. They have been constructed at the cost of 2,000*l.*, but with the price paid for land, and the expense of laying a new line of 14-inch pipes from the works to Falkirk, the cost of the whole undertaking is 15,000*l.* Mr. W. W. Neilson, Falkirk, was engineer of the work, and the contractors were Messrs. Alex. Stark & Son, Kilsyth.

SANITARY IMPROVEMENTS NEAR LLANDUDNO.—For months past drainage and sewerage works on an extensive scale have been going on in Penrhyn Side, an important adjunct to Llandudno, where building sites are in great demand. These works have now been completed from the designs of Mr. T. Booth Farrington, C.E., the Borough Surveyor of Conway, and Engineer to the Cowlyd Water Board. To mark the completion of the works, the contractor, Mr. Sheffield, Rhyl, gave a dinner at the Victoria Restaurant on the 11th inst. to the engineering staff, the members of the Penrhyn Parish Council, and the workmen, about seventy sitting down.

BLACKWALL TUNNEL: PROGRESS OF THE WORKS.—The Bridges Committee of the London County Council, in their report on the progress of the works connected with the Blackwall Tunnel during the month of November, state that the sewerage works on both sides of the river, the fireproof fence at, and the approach road to, Ordnance Wharf, East Greenwich, the river wall at Northumberland Wharf, Poplar, and the cut-and-cover operations on the south side of the Thames are completed. At shaft No. 4 the glazed brick lining is nearly finished. With the exception of the special rings at shafts Nos. 1, 2, and 3, the construction of the cast-iron-lined portion of the tunnel is completed. In that part of the cast-iron-lined tunnel which runs beneath the river, the concrete lining is executed for three-fourths of the length, and the tile-facing has been commenced. On the north shore, out of a total distance of 436 ft., the cut-and-cover work is done for a length of 427 ft. At the Poplar end of the tunnel the granite carriageway is finished, and about one-half of the granite channel and kerb has been laid at the southern extremity of the tunnel. The progress made with the erection of the entrance-houses has been fairly satisfactory during the past month; the building on the north side being constructed to a height of 26 ft., and that on the south side to an average altitude of 14 ft. In connexion with the electric light station, the well, from which it is proposed to obtain water for condensing purposes, is sunk to within 5 ft. of the total depth, and the excavation for the boiler-house is proceeding. The ground in the latter case is, however, of such an unsatisfactory nature that it will be necessary to drive piles over the whole area. The approximate cost of the works, including the formation of the approach roads comprised in the contract, is 736,052*l.*, of which the sum of 12,644*l.* is due to the progress made during the month of November. The contractors are Messrs. Pearson & Son, and the amount of their contract is 871,000*l.*

STAINED GLASS AND DECORATION.

WINDOW, ST. MATTHEW'S CHURCH, EALING.—A window by Mr. Frampton, of Buckingham Palace-road, has recently been placed in the Church of St. Matthew, Ealing, as a memorial of the late Bishop of Antigua, who resided there for many years. The subjects are "The Call of St. Matthew" and "Feast in St. Matthew's House," and the treatment is Early Perpendicular.

ST. NICHOLAS CHURCH, BIRMINGHAM.—A memorial to the late Miss Hartley has recently been placed in the west-end aisle of St. Nicholas Church, the subject being "The Almsgiving of Dorcas," from the studio of Mr. T. W. Camm, Smethwick, near Birmingham.

FOREIGN.

FRANCE.—The jury of the École des Beaux-Arts has decided upon the distribution of prizes for the first-class Architectural Competition: out of 165 designs they have awarded, first-second medals to MM. Sébille, Gustave Perret, Rogers, and Morice. The subject was "a laboratory of maritime zoology." In the competition of outline drawings, the subject of which was "a bay of a state gallery in a palace," the first-second medals were awarded to MM. Neukomm, Wolff, Prudent, and Van Pelt.——The General Council of "Ponts et Chaussées" has just definitely decided upon the design presented by the Engineers Résal and Alby for the new bridge Alexandre III. The foundations of this new bridge will shortly be begun. The sides have already been calculated with a view to having

the finest perspective from the future Avenue des Invalides, at the same time giving better means of navigation than the other bridges over the Seine.——The Paris Municipal Council has decided that the monument that is to be erected to the memory of Victor Hugo shall be placed on the spot where the central basin stands in the Place Victor Hugo, close to the house of the poet.——The monument to the composer Georges Bizet, just completed by M. Falguière, was to have been placed in the Parc Monceau, but the Government has now decided that it shall be placed inside the new Opéra Comique.——M. Boutet de Monvel has just instituted at the Cercle de l'Union Artistique an interesting water-colour exhibition of scenes in the life of Jeanne d'Arc.——An exhibition of china and art glass has been organised by MM. Bigot, Rousseau, Gallé, Koepping and will be held in the Galleries of "l'Art Moderne," Rue de Provence.——M. Léonce Muller has just been elected President of the "Société des Architectes Marseillais."——M. Gouault has been elected President of the Société des Architectes de la Seine Inférieure, and M. Léon Carle has been elected President of the Société des Architects de Seine et Oise.——The Académie des Beaux-Arts has just elected as corresponding members, in place of MM. Herkomer and Cuypers, (recently elected Associés Etrangers) and of the late M. Marionneau, MM. Paul Robert, painter, of Neuchâlet Saceoni, architect of Rome, and Hymans, curator of the Musée des Estampes at Brussels.

BOMBAY.—The Yacht Club Chambers (designed by Mr. John Adams, and being looked after by Mr. F. W. Stevens) are advancing rapidly towards completion, the roof trusses having lately been put in position.—The question of house accommodation in Bombay is becoming daily more embarrassing. Native owners of houses on Malabar Hill and other desirable situations are naturally, owing to increasing wealth, education, and refinement, taking to living in them, or to letting them to their own countrymen; and European merchants and officers suffer, not only in pocket, as rents are increasing rapidly, but in having to put up with inferior accommodation. It is difficult for Government to come at once to the rescue, but something is about to be done in this way by them; the question must, however, be taken up also, in greater measure, by more or less private agencies. Land in Bombay is rising steadily in value, and there is very little on which residences can be built. It, therefore, behoves all to be provident in the utilisation of it.—*Indian Engineering.*

NEW YORK.—The project for building a tunnel under the East River, from New York to Brooklyn, after going through many vicissitudes, has taken what appears to be its final shape, and work on it is to be commenced at once. The company which is to construct the tunnel represents mainly the surface lines of street cars, although the President, Mr. Henning, was formerly Vice-President and General Manager of the Long Island Railroad Company. The tunnel itself will be far down town, extending from the neighbourhood of the City Hall, in New York, to a point near the stores of the Brooklyn Warehouse Company, a distance of 4,700 ft., so that passengers who now cross the river by the Fulton ferries can be transported across without leaving their cars. A contract has been made with Messrs. Sooysmith & Co. for the whole of the construction, and it is supposed that the tunnel will be opened for traffic in about eight months.—*American Architect.*

MISCELLANEOUS.

THE CHRISTMAS HOLIDAYS. — Next week the *Builder* will be published on Thursday, and to ensure attention all communications for the Editor must reach our office by Wednesday morning next.

SURVEYORSHIP APPOINTMENTS.—At the usual fortnighly meeting on the 11th inst. of the Strand (London) District Board of Works, presided over by Mr. Walter Emden, J.P., L.C.C., a long report was submitted from a special committee as to the appointment of a Surveyor and Engineer. The names of three candidates were then put to the vote, and in the result the Chairman declared that the majority had recorded their votes for Mr. Robert C. Master, at present assistant in the City Engineer's office, Liverpool.—Mr. Harold E. Featherstone, who served his articles between October, 1890, and November, 1893, with Mr. C. H. Cooper, Engineer and Surveyor to the Wimbledon Urban District Council, was on the 8th inst. appointed Borough Surveyor of Chesterfield. Mr. Featherstone acted as junior assistant in the Surveyor's office, Wimbledon, between 1893 and January, 1896, when he was elected Assistant Borough Surveyor of Chesterfield, under Mr. N. Dunscombe, and since the death of the latter has acted as Surveyor.—At a meeting of the Standing Joint Committee of the County of London, held on the 9th inst., Mr. A. J. Wood, of 3, Lancaster-place, Strand was appointed Surveyor to the Sessions House, Newington, in succession to Mr. C. H. Howell, to whose practice Mr. Wood has recently succeeded.

ST. PANCRAS.—A useful little book upon the burial-grounds, both old and new, situated in or belonging to this parish, has just been written by Mr. Walter E. Brown, Chief Clerk and Registrar to the Burial Department of the Vestry Offices. Within a short compass he gives several interesting particulars about former sites in the parish, the two grave-yards of St. Pancras and St. Giles, around Old St. Pancras Church, which the late Lord Magheramorne, being then Chairman of the late Metropolitan Board of Works, opened in 1877, and many others that have also been converted into public gardens. Mr. Brown recalls the interment, at St. Pancras, of Paoli, whose leaden coffin, found intact, was exhumed in August, 1889, for removal to his own land; Flaxman; Sir John Soane; and James Leoni; Woollett, the engraver; Father O'Leary; John Walker, author of "The Pronouncing Dictionary," to whom Baroness Burdett-Coutts has erected a marble monument; Lady Caroline Drummond, Comtesse de Melfort (only child of the last Earl of Seaforth, and Dr. Johnson's "little Jacobitish mistress"); Malcolm, author of "Londinium Redivivum;" and Mary Wollstonecraft Godwin. Some old monuments from the former church (rebuilt in 1847-8 by Mr. A. D. Gough and Mr. Roumieu) are preserved, amongst them being that of Samuel Cooper, the miniature painter. The registers record the burials of Jeremy Collier and Mrs. Slingsby, Lady Slingsby, a popular actress in the plays against which Collier inveighed; and Lady Henrietta, daughter of the first Earl of Waldegrave, wife of Beard, the singer. We may add that the memorial pillar and dial set up by Lady Burdett-Coutts was designed by Mr. J. K. Aston, and the John Mills buried here in August, 1811, was believed to be the last survivor of the prisoners thrown into the Black Hole, Calcutta.

THE "GREAT RED LION" HOTEL, ST. ALBANS.—The "Great Red Lion" Hotel is to be altered and enlarged—practically rebuilt, in fact—after the designs of Messrs. Pollard & Newton, of York-buildings, Adelphi. It stood in High, *olim* Church, street, at the corner of French-row, and was known, *temp.* Mary, as the "Lion," by which sign it is cited in a report, or survey, dated Aug. 13, 1556, of Crown Revenues in St. Albans (and elsewhere), for previously to the dissolution nearly the whole town had been apportioned out to the support of various offices attached to the monastery.* The inn had been a famous posting and stage-waggon house in its day, and was remarkable for a stable—disused as such of late years—constructed under ground, measuring 65 ft. by 15 ft., and having a brick vault rising to a height of about 13 ft. A drawing of the inn, refronted in 1792, was made a few weeks ago, and an aqua-tint view was published in 1812.

CIVIL AND MECHANICAL ENGINEERS' SOCIETY.—On Thursday last week the members of the Civil and Mechanical Engineers' Society paid a visit, by the kind permission of the Directors, to the very interesting shot and lead works of Messrs. Walkers, Parker, & Co., Limited, Belvedere-road, Lambeth. The party was conducted over by the engineer, Mr. Darling. The casting of the lead slabs and their conversion under the rolling mills into sheets of lead was watched with special interest, together with the different processes used for drawing the lead pipes. The members afterwards visited the shot tower to view the process of shot-making from the commencement to the final packing for export.

PROPOSED BUILDERS' EXCHANGE FOR EDINBURGH.—At the annual dinner of the Edinburgh and Leith Master Builders' Association on the 10th inst., Mr. Adamson remarked that the friendship that already existed between the builders and the merchant cognate trades was likely to be even closer than it had hitherto been, as there was a movement at present to institute a Building Trades Exchange on somewhat similar lines as the Glasgow Exchange.

BRITISH INSTITUTE OF CERTIFIED CARPENTERS.—This Institute held its annual dinner at Carpenters' Hall on the 12th inst., the President, Professor Banister Fletcher, in the chair. Among the visitors were the Master, Mr. Jesse Jacob, and Wardens, and several members of the Court of the Worshipful Company of Carpenters. The Vice-President, Mr. W. M. Dixon, in proposing the "Worshipful Company of Carpenters, coupled with the Master and Wardens," touched upon the influence of early carpentry in moulding the mechanical skill and power of the English as a nation. Mr. Warden Preston, in proposing the "British Institute of Certified Carpenters," remarked upon the growing demand and appreciation of scientifically and soundly constructed work. Mr. J. Herring, the retiring Secretary, replied, giving a brief outline of the work of the Institute in the past. These remarks were supplemented by Mr. T. M. G. Lloyd, the present Secretary, who expressed great hopes for the future, and further added his opinion, from personal observation, that the workmanship of the present compared favourably with, and was superior in construction to, that executed in bygone days.

CAPITAL AND LABOUR.

THE BUILDING TRADE IN PLYMOUTH.—With reference to the request of the Carpenters' and Joiners', Plasterers', and Labourers' Associations for an increase of ½d. per hour in pay, commencing in May next, and also a revision of the code of rules, the Master Builders' Association have decided to agree to the request in May, 1898, and to allow other matters in dispute to be settled by arbitration. The Association have pointed out that many builders have contracts in hand which cannot be completed for, in some cases, over twelve months, and that a rise of wages in May would thus cause considerable loss to them. The Association also intend to insist that after the rise of wages in 1898 no further demands shall be made for a period of five years, so that they shall not be inconvenienced by such short notice as in the present case.—*Western Morning News.*

* For reference to that Augmentation Office Record we are indebted to the courtesy of Mr. W. Page, F.S.A.

LEGAL.

IMPORTANT CASE AS TO "DANGEROUS STRUCTURES."

THE case of the London County Council *v.* Hobbis came before Mr. Justice Wills and Mr. Justice Wright, sitting as a Divisional Court of Queen's Bench, on the 10th inst., it being the appeal of the London County Council from the decision of Mr. Mead, one of the Metropolitan police magistrates, upon a question of law which arose before him on a summons taken out by the appellants for the recovery of expenses amounting to 1*l.* 7*s.* 6*d.* alleged to have been incurred by them in the matter of a dangerous structure at No. 331, West Ferry-road, Poplar, and in carrying into force the provisions of the London Building Act, 1894, with respect to the structure.

The special case which had been stated, set out that it was proved and admitted before the magistrate that the following notice, dated January 9, 1896, and designed by the District Surveyor for the District of Poplar, was received in due course in the Superintending Architect's Department of the London County Council:—

"I hereby give you information that a certain structure, known as No. 331, West Ferry-road, Millwall, in the Parish of Poplar (All Saints), in the County of London, is reported to be in a dangerous state, and I request that the same may be dealt with by you according to the Statute. Signed, John Clarkson, 136, High-street, Poplar, E."

On January 10, 1896, the following requisition was sent from the Department of the office of the appellants to the District Surveyor requesting him to survey the structure:—

"Whereas it has been made known to the London County Council, acting in the execution of the London Building Act, 1894, that the structure known as No. 331, West Ferry-road, in the parish of All Saints, Poplar, in the County of London, is now in a dangerous state, now, the London Council do hereby require you, John Clarkson, being a competent surveyor, to survey the said structure, and upon completion of your survey to certify to the Council your opinion as to the state of the said structure."

On January 11, 1896, the District Surveyor sent to the office of the appellants the following certificate of his survey of the structure:—"I certify that I made a survey of the structure known as No. 331, West Ferry-road, in the parish of All Saints, Poplar, in the County of London, as required by the London County Council, and that, in my opinion, the said structure is in a dangerous state. Further, that it is necessary that the said structure should be shored up, or otherwise secured; and further, that the owner or occupier should be required forthwith to take down the falling and defective brickwork of bakehouse, or otherwise to secure the same."

On January 14 the following notice was sent by the appellants and served on the respondent:—"The London County Council, acting in the execution of the London Building Act, 1894, having had it made known to them that the above-named structure is in a dangerous state, and having required a survey thereof to be made by a competent surveyor, and having had certified to them his opinion, to the effect that the said structure is in a dangerous state, do by this notice require you forthwith to take down the falling and defective brickwork of bakehouses or otherwise to secure the same, and also to shore up the same structure immediately. Signed, Thos. Blashill, Superintending Architect, on behalf of the London County Council." The case went on to state that the respondent, on the receipt of the notice, executed the necessary works, but neglected or declined to pay on demand the expenses of the appellants, which had been calculated in accordance with the provisions of the London Building Act, 1894. The appellants contended before the magistrate that the powers and duties conferred upon them by Sections 103 and 106 of the London Building Act, 1894, were ministerial only, and had been duly delegated to and were properly exercisable by and under the supervision of their Superintending Architect, and in support of this contention there was produced before the magistrate an order made by the late Metropolitan Board of Works, dated October 1, 1869 for carrying into execution the second part of the Metropolitan Building Act, 1855, relating to dangerous structures, and the appointment under seal of Mr. Thos. Blashill as Superintending Architect, dated January 28, 1887. The magistrate held that the expenses, if recoverable at all, could only be recoverable where Sections 103, 105, and 106 of the London Building

Act, 1894, had been complied with, and that those sections had not been complied with in this case, inasmuch as it had not been made known to the appellants that the structure in question was in a dangerous state, and the appellants had not required a survey of the structure to be made under Section 103, nor had they caused the notice to be served on the respondent under Section 106. He further held that the appellants had no authority to delegate their power to the Superintending Architect, so that the routine followed in his department was not a compliance with the Section in question. The question for the decision of the Court was whether the magistrate's decision was right in law.

Mr. Horace Avory appeared as counsel for the appellants, and the respondent appeared in person.

Mr. Avory, in the course of his argument on behalf of the appellants, said that, if the magistrate was right, the practice which had prevailed under the Sections of the Act of Parliament relating to dangerous structures ever since the year 1869 was completely wrong. The magistrate had held that in all these cases of information being given of a dangerous structure information must in each case be brought before the Council as a body, and that the Council must thereupon call upon the District Surveyor or a surveyor to make a survey. If that was correct, the practical result would be that the whole mischief which the Act was intended to prevent would happen long before the Council could consider any particular case. The building would actually tumble down long before the Council could consider any matter of that kind.

The respondent said that he had a good defence independent of the point raised by the magistrate, and he asked if their lordships were against him on the point raised that the case might be remitted to Mr. Mead (the magistrate) to be heard on the merits. It might be that the London Building Act gave to the County Council work it could not do, but in the opinion of himself and the magistrate the London Building Act of 1894 expressly said that those things should be done by the London County Council and not by any official. It was monstrous to suppose that a resolution under the Act of 1869 could obviate the London Building Act of 1894 which said that those things should come before the London County Council. He contended that if those powers could be delegated it should be to a committee and not to an architect who was not a member of the London County Council.

Mr. Justice Wills, in giving judgment, said that he was of opinion that the case must be remitted to the magistrate, to be dealt with on its merits. He thought that the view taken by the learned magistrate was erroneous. Matters of this kind must be done by authorising proper representatives, without going to the Council. The respondent had alleged that the powers of the Act had been tyrannically or unnecessarily put in force. He (his lordship) expressed no opinion on that. He considered that the magistrate had come to an erroneous conclusion, and that he must hear the case on the merits. Mr. Justice Wright concurred, and the appeal was accordingly allowed, and the case remitted to the magistrate.

Mr. Avory asked for the costs of the appeal.

The respondent said that he was in no way responsible for them.

Mr. Justice Wright (to the respondent): Did you take this legal point before the magistrate?

The respondent: No, I did not; the magistrate himself took it.

Mr. Avory said that he was informed that the respondent did take the point.

Mr. Justice Wright: Well, he did not mean to. He did it by accident.

Mr. Avory: Well, as your lordship thinks proper, if you think the ratepayers must pay.

Mr. Justice Wills: Yes; I am one of them.

"TIME PENALTIES" IN A BUILDING CONTRACT:

IMPORTANT CASE IN A DIVISIONAL COURT.

THE case of Dodd *v.* Churton came before Mr. Justice Wills and Mr. Justice Wright, sitting as a Divisional Court of Queen's Bench on the 15th inst., the facts being shortly as follows:—It appeared that Mr. Churton instructed Mr. Dodd to execute certain works at his residence at Whitchurch, Salop, at a cost of 660*l.*, the contract to be completed by June 1, 1892, the plaintiff to be liable to a penalty of 2*l.* per week for each week of delay. The work was actually completed in December, 1892—a delay of twenty-seven weeks. The plaintiff in the action claimed for extra work, and the defendant allowed two weeks delay and counter-claimed for the other twenty-five weeks. The plaintiff, before the County Court Judge of Shropshire, contended that the fact of extra works abolished the conditions with reference to delay. The learned County Court Judge found in his favour, hence the present appeal.

Mr. Lloyd appeared as counsel for the appellant and Mr. Loehnis for the respondent.

At the close of the arguments of counsel, owing to there being a disagreement between their Lordships, Mr. Justice Wright, as the junior judge, delivered judgment first.

His Lordship said by an agreement dated February 24, 1892, the plaintiff agreed to do certain building work for the defendant for the price of 660*l.* on the terms and conditions, and subject to all the stipulations of an annexed specification which were made part of the agreement. The general conditions in the annexed specification provided, *inter alia*, as follows: "The whole of the works and any other works that may be ordered as additions to this contract are to be executed and completed in the best and most workmanlike manner and with the best materials," and so forth, "to the full spirit and intent of this contract, which is intended to comprise everything necessary to the perfect completion of the works. Every part of the works to be done to the satisfaction of the architects, and their direction to be followed in every respect, and their opinion on all questions relating to the works or contract to be final and conclusive." (4) An authority given by the architects for any alteration or addition in or to the works is not to vitiate the contract, but all additions, omissions, or variations made in carrying out the works for which the price may not have been previously agreed upon are to be measured and valued, and certified by the architects, and added to or deducted from the amount of the contract, as the case may be, according to the detailed schedule of prices on which the contract is formed. The schedule of prices to apply to all deductions, and to additions up to 15 per cent. above the amount of the contract; any additional works beyond 15 per cent. above the amount of the contract and any item to which the schedule of prices does not apply to be allowed for at such prices as the architects may consider fair and reasonable. (18) "In case the contractor shall, from any cause, be prevented from proceeding, or shall refuse or delay to proceed with the work according to the satisfaction of the architect, they (the architects) shall be at liberty, on giving seven days' notice to the contractor to proceed with and finish the same, or to use such means as he may consider best to expedite the same, and to deduct the expenses therefrom from the moneys due to the contractor." (19) "The architects shall have the power to deal with or suspend the works during unsuitable weather, or for any other reasonable cause; but the works are to be recommenced after receiving due notice from the architects. The time lost by such delay to be added to the time allowed for completion." (24) The building to be ready for the roof-timbers by May 1, 1892, and the whole of the works to be completed by June 1, 1892, under a penalty of 2*l.* for every week that any part of the works remains unfinished after that day as liquidated damages." His Lordship said that the time fixed for completion was fourteen weeks after the date of the contract, the actual date of completion being in December, a delay of twenty-seven weeks, and the defendant counter-claimed for the agreed damages for that delay. The plaintiff answered that a part of the delay, namely, two weeks, was caused by extra work ordered by the defendant or his architect, and said that the legal effect of that was to destroy altogether the general condition relating to penalties for delay. That construction would not give due effect to all the provisions of the contract, which gave expressly to the defendant the right to compensation for delay, and the right to order extras. The defendant had acted strictly within his rights. His architect had conceded an allowance of the two weeks by which the extras were said to have delayed the work. That appeared to his Lordship complete justice, and in no way infringed the principle that a party to a contract, or covenant, shall be excused from performance so far as it is rendered impossible by the conduct of the other party. He was of opinion that the counter-claim had been established.

Mr. Justice Wills said that he was unable to concur. It was clear to his mind that the contract, so far as penalty was concerned, was confined to a contract to accept that measure of damages if there should be delay in the execution of the works as originally specified. It seemed to him that the works were altered in a material respect, and there were departures from the contract which consisted partly of extras properly so-called, and partly of alterations, and, therefore, the builder had a right to say it was not what he undertook, and Clause 24 was not applicable to the present state of things. He (his Lordship) could see no injustice in so holding. That view seemed to be consonant with the general current of the authorities and in conformity with what had been the general understanding of the profession for many years. He thought that there was no ground for disturbing the judgment of the learned County Court Judge, and that the appeal should be dismissed.

The appeal was accordingly dismissed with costs.

Leave to appeal was granted.

BROWN *v.* COLLINGS:

ANCIENT LIGHTS CASE.

THE case of Brown and others *v.* Collings came before Mr. Justice North in the Chancery Division on the 16th inst., it being an application by the plaintiffs, the owners and occupiers of Nos. 83, 84, 85, and 86, High-street, Bromley, for an injunction to restrain the defendant, the owner of No. 82, High-street, Bromley, from an alleged obstruction of ancient lights belonging to the plaintiffs.

The plaintiffs' case was that the defendant was erecting at the rear of their premises, to the south-west, a new building, the effect of which was to considerably obstruct the ancient lights in the rear of their premises.

His Lordship, after hearing evidence and the arguments of counsel, granted an injunction restraining the defendant from obstructing the plaintiffs' ancient lights.

MEETINGS.

FRIDAY, DECEMBER 18.

Architectural Association.—Mr. W. H. Seth-Smith on "A Plea for the Application to Architectural Design of Natural Forms as Revealed by the Microscope." With illustrations. 7.30 p.m.

Institution of Civil Engineers (*Students' Meeting*).—Mr. John W. Kitchen on "Wells, and Well Sinking." 8 p.m.

Institution of Junior Engineers (*Westminster Palace Hotel*).—Paper on "Electric Central Station Working," by Mr. P. W. McDougall. 8 p.m.

SATURDAY, DECEMBER 19.

London and Provincial Builders' Foremen's Association.—Memorial Hall, Farringdon-road, E.C. 7.30 p.m.

TUESDAY, DECEMBER 22.

Institution of Civil Engineers.—Paper to be discussed, "Steel Skeleton Construction in Chicago," by Mr. E. C. Shankland. 8 p.m.

Trades' Training School (*Carpenters' Hall, London Wall*).—Presentation of Prizes by Major-Gen. Sir John F. D. Donnelly, K.C.B. 8.30 p.m.

WEDNESDAY, DECEMBER 23.

Builders' Foremen and Clerks of Works' Institution.—Annual meeting of the Directors. 8 p.m.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

18,967.—MAKING PIPES FOR DRAINAGE, SEWERAGE, &c.: *F. H. Brook.*—This invention consists—(1) in the method of making sockets of pipes, which consists in forming the socket shoulder under distinct pressure before the formation of the cylindrical part of the socket, and to form the latter under continuous pressure, in a mould which expands as the clay fills it; (2) in a method of formin socket after extrusion of barrel of pipe; (3) in extrusion machines the use of screws to force clay through the dies, furnished with turn-down edges, and narrowing in width.

21,651.—WINDOW SILLS: *J. Hookham.*—In the stone or cement sill the inventor forms a longitudinal V groove, under centre of wood sill. Running from one end of this, transversely to under side of stone sill, obliquely, is a metal tube, adapted to carry off any water that should drain through between wood sill and stone or cement ditto.

23,773.—PAVING BLOCKS AND SLABS: *M. M. Dessau.*—The invention relates to composite blocks with a body formed of cement, artificial stone, &c., covered with a wood facing to receive wear of traffic. The wooden portion of the block may be of any suitable cross section, and inventor specifies sundry modifications of his invention.

553.—CASEMENTS: *W. Youlton.*—In order to form a suitable weather check between the closing stile of an inward and outward opening casement and the closing stile of its frame, the inventor provides a groove in latter extending from top to bottom, adapted to receive a vertical metal bar of any suitable section, this being connected to stile of frame by a hinge. When casement is closed this bar acts as a weather check, and when required to open inwards it can be swung clear of wooden stile.

746.—WOOD SCREWS: *C. Horton.*—The inventor forms a wood screw having two or more threads, the threads running into each other at or near the end, and so forming a point.

5,900.—CHIMNEY-POTS, VENTILATORS, &c.: *J. Hargreaves.*—This invention consists in the combination with a chimney-pot, ventilator shaft, or the like, of a tapering tube (or tubes), provided with a trumpet mouth (or mouths) at or near the bottom opening into the air, and ascending upward and inward inside the pot, so as to cause an ascending current of air in centre of same.

20,790.—CHIMNEY-POTS: *M. Strüdel.*—This invention consists in a hood for chimney, characterised by the arrangement of horizontally-hinged flaps, having lateral side plates and projecting plate for the hinges, said flaps being arranged in the direction of the four winds; also a cap to the said hood, and rods to couple the opposite flaps, so that when one flap is closed by the pressure of the wind the opposite one will be opened.

NEW APPLICATIONS FOR LETTERS PATENT.

NOVEMBER 30.—27,135, H. Brown, Concealed Hinges for Doors.—27,200, W. Brothers, Manufacture of Plaster of Paris.—27,201, K. Schiek, Apparatus for Opening Doors by Foot Pressure.

DECEMBER 1.—27,239, C. Kôster, Producing Artificial Veneers.—27,246, G. Low, Apparatus for Testing Drains, &c.—27,279, W. Westecott, Hinges or Pivots for Ventilators, &c. — 27,329, M. Krause, Detachable Bolt Mechanism.

DECEMBER 2.—27,374, H. Hyde and J. Adey, Hinges for Controlling Fall-Down Doors, &c.—27,379, W. Allen, Flushing Drains, Sewers, Water-closets, &c.—27,383, A. Shirley, Soldering Bits.—27,386, S. Gilbert, Doors.—27,392, W. Beynon, Raisers for Door and other Latches.—27,406, P. Wood, Continuous Kilns for Burning Bricks, Tiles, Sanitary Ware, &c., and for Salt Glazing, Drying Sheds, &c.—27,407, J. Madeley, Syphon Flushing Apparatus. — 27,420, M. Newlove, Raising and Lowering Window Sashes.—27,430, J. Longue, Window Fasteners, &c.—27,432, T. Mathews and F. Tarr, Clamps.—27,461, C. Watson, Roofing Tiles.—27,474, W. Renshaw, Draining Towns and other places.

DECEMBER 3.—27,498, W. Steele, Windows.—27,528, W. Allen, Chimney Cowls.—27,570, P. Hutson, Junctions and Connections for Drainage Pipes.—27,583, F. De Jersey Clere, Construction of Window Sashes and Frames to facilitate cleaning, &c.

DECEMBER 4.—27,614, J. Sankey and C. Turnock, Sharpening and Setting Saws.—27,648, A. Taylor, Artificial Stone, for building, paving, &c.—27,652, A. Everett, Air Pressure Pump for forcing stoppages in soil pipes, gas and hot water combined.—27,654, J. Gill, Ventilators for

COMPETITION, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITION.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered.
*Plans for New School	Dudley Grammar Sch. Governors	50*l.* first and 20*l.* second premiums	Feb. 15

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
*Roadmaking and Paving	Walthamstow U.D.C.	G. W. Holmes, Town Hall	Dec. 22
Reservoir, Middleton, Derby	Ashbourne R.D.C.	Clerk, Council's Offices	do.
Drainage Work, near Burnley	Barrowford U.D.C.	J. Mallinson, Surv. Barrowford, Burnley	do.
Goods Shed Extension, Bradford	L. & Y. Ry. Co.	C. W. Bayley, Sec. Hunt's Bank, Manchester	do.
Alterations to Manufactory, Kendrew-street, Darlington	Mineral Water Co. Ltd.	F. Martin, Archt. West-end Buildings, Skinnergate, Darlington	do.
Underground Convenience, Church-street	Blackpool T.C.	J. Wolstenholme, Boro' Surv.	do.
Road Works	Shoeburyness U.D.C.	J. W. Harris, Surv. Rampart-st. Shoeburyness	do.
Sewer, Lion's Bridge to Hindsford	Atherton (Lancs) U.D.C.	J. Newton & Son, Engr. 17, Cooper-st. Manchester	Dec. 23
Sewering, Paving, &c. Back Westbourne-avenue	Gateshead Corp.	Boro' Surv. Town Hall	do.
Residence and Stabling, Boscastle, Cornwall	Dr. C. Wade	O. B. Peter, Architect Launceston	do.
Sewerage Works, Sunniside, Lamesley	Chester-le-Street U.D.C.	D. Balfour, C.E. 3, St. Nicholas Buildings, Newcastle-on-Tyne	Dec. 24
Water Main	Chesterfield R.D.C.	J. Frith, Engr. Baslow, near Chesterfield	Dec. 26
Alterations to Workhouse, Weston-Super-Mare	Axbridge Union	A. Powell, C.E. 3, Unity-st. College-green, Bristol	Dec. 28
School Enlargement, Ballater, Aberdeen	Glenmuich & Tullich Sch. Bd.	Clerk, Board's Offices, Ballater	do.
Draining, Paving, &c. Heywood-road	Castleton U.D.C.	R. J. Webster, Surv. Manchester-rd. Castleton	do.
*Granite and Flints	Kingston-on-Thames Corp.	Boro' Surv. Clattern House	do.
*Alterations to Infirmary	Chelsea Guardians	Lansdell & Harrison, 12, Compton-terrace, Highbury	Dec. 29
*Alterations to Workhouse	Bethnal Green Union	T. E. Holman, 109, Bow-road, E.	do.
Restoration of Church, Bridport	.....	F. A. Turner, 54, South-street, Bridport	Dec. 31
Flints	Eastbourne Union Guardians	L. Jeffery, Clerk, Trinity-chambers, Eastbourne	Jan. 1/97

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
*Alterations to Workhouse, &c.	Durham Union	H. I. Gradon, Market-place, Durham	Jan. 1
*Works and Materials	St. George's, Hanover-sq. Vestry	G. Livingstone, 1, Pimlico-rd. S.W.	do.
*Underground Convenience	St. Martin's-in-the-Fields Vestry	C. Mason, Vestry Hall, Charing Cross-rd. W.C.	Jan. 4
*Cast-Iron Ventilating Columns	Beckenham U.D.C.	J. A. Angell, Council Offices	do.
*Wood Paving, Ballast, Sand and Cement, Pitch, Creosote, Oil, Granite Kerb, Broken Granite, &c. Nine Houses, Temple-road, Blackrock, Ireland	Paddington Vestry	Surv. Vestry Hall, Harrow-road, W.	do.
	.....	Millar & Symes, Archts. 186, Great Brunswick-street, Dublin	Jan. 5
*New Custom House, Cardiff	Commrs. H.M. Works	12, Whitehall-place, S.W.	Jan. 6
*Branch Post and Sorting Office, Derby	Commrs. H. M. Works	12, Whitehall-place, S.W.	Jan. 8
*Sewerage Work, Gas-Engines, Pumps, &c.	Southend-on-Sea Corp.	J. Mansergh, 5, Victoria-street, S.W.	Jan. 11
*Water Cart, Vans, and Sanding Machine	Barnes U.D.C.	Surveyor, Council Offices	do.
Baptist Chapel and School, Manchester-road, Bury	.....	T. Nuttall, Archt. 20, Market-street, Bury	do.
*Extension of Buildings	University College of Wales	T. E. Morgan, 12, Baker-street, Aberystwyth	Jan. 12
*Making-up and Paving Roads	West Ham Council	L. Angell, Town Hall, Stratford, S.E.	do.
*Warehouse, Liverpool	M. S. & L. Ry. Co.	Engr.'s Office, London-rd. Station, Manchester	do.
Pavilion at Hospital, Flaybrick Hill	Birkenhead Corp.	C. Brownridge, C.E. Town Hall	Jan. 18
*Officers' House and Outbuildings, Dengemarsh, Kent	Admiralty Commrs.	Works Department, 21, Craven-street, W.C.	Jan. 22
*Construction Arabic Museum and Library, Cairo	Egyptian Government	Ministry of Public Works, Cairo	Feb. 1
Roads and Sewers, Barry Island, Glam.	Barry Island Land Co.	T. Trevor Roberts, Hill, & Co. Barry Dock	No date
Roads and Sewers, Frescoylfa Estate, Canton, Cardiff	.....	Jones & Co. 18, St. Mary-street, Cardiff	do.
Hotel, Mount Pleasant Estate, Cadoxton, Barry	.....	H. T. Thornley, 104, St. Mary-street, Cardiff	do.
Minister's House, Shobnall-street, Burton-on-Trent	.....	C. F. Underhill, New-st. Burton-on-Trent	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Manager or Contractor's Agent	Torquay T.C.	3*l.* 3s. per week	Dec. 23
*Road Foreman	Gravesend T.C.	2*l.* per week	No date

Those marked with an asterisk (*) are advertised in this Number. Competition, *p.* iv. Contracts, *pp.* iv., vi., *&* viii. Public Appointments, *pp.* xvi. *&* xvii.

Buildings, &c.—27,684, A. Pollard, Securing and Fastening Roofing Slates and Tiles.

DECEMBER 5.—27,721, J. Gait, Glazing for Horticultural Structures.—27,738, W. Oates and J. Green, Waste Water-Closets.—27,739, B. Massey, Chimney Ventilating Cowls, &c.

PROVISIONAL SPECIFICATIONS ACCEPTED.

22,025, J. Haffenden, Elevator for Windows of Greenhouses, Conservatories, and Public Buildings. — 24,461, J. Nolte, Securing Opened Doors, Windows, &c., in any required position relative to their fronts. — 25,645, H. Williams, Trough Closets and Urinals. — 25,757, C. Gorringe, Stoppers for Varnish, Oil Paint Cans, &c.—26,103, H. Collins, Window Fastener. — 26,109, T. Mercer, Wood Flooring. — 26,161, A. Ransome, Saw Benches.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to opposition for two months.

23,360, W. Morgan, Ventilation of Sewer Entrance Covers and other Covers for Drainage or other Works. —23,973, S. Anderson, Brick and Tile Making Machinery. —24,992, A. Perkins, Ladders. — 19, J. Mussellwhite, Wood Block Flooring.—1,997, A. Von Kunowsky, Centre Bits and similar Boring Tools. — 2,633, G. Anderson, Stone Sawing Machinery. — 2,843, H. Simmonds and J. Delaney, Kilns or Furnaces, applicable for Burning Lime, &c.—3,416. R. Tyhurst, Kerbs, Edging Blocks, Platform Copings, Flights of Steps, &c.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

December 2.- By C. CANEY (at Camberwell).

Camberwell.—6, Hampton's-av.; and 38 and 60, Brisbane-st., u.t. 85 yrs., g.r. 42*l.*, r. 122*l.* 4s. £115
86 and 88, Warner-road, u.t. 71 yrs., g.r. 6*l.*, r. 56*l.* 170
Dulwich.—Dunstan's-rd., plot of building land, f. 240
Peckham.—93, Nunhead-lane, f., r. 35*l.* 645

By STAFFORD & ROGERS (at Biggleswade).

Langford, Beds.—Freehold farmhouse and 13a. 3r. 31p. 950
Three enclosures of land, 30a. 2r. 36p., f. 845

By THORNBARROW & Co. (at Langwathby).

Langwathby, Cumberland.—Various enclosures of land, with house, cottage, &c., 144a. 2r. 31p., f. and c. 6,100

By Messrs. SPELMAN (at Great Yarmouth).

Runham, Norfolk.—A farm, containing 98a. 3r. 29p., f. and c. 2,450

December 3.—By Messrs. ROYCE (at Uppingham).

Uppingham, Rutland.—Three enclosures of land, 28a. 2r. 29p., f. and c. 2,380

By EDWIN EVANS.

Finsbury.—87 to 97 (odd), Tabernacle-st., u.t. 51 yrs., g.r. 104*l.* 1s. 10d., r. 516*l.* 18s. 4,100
Shoreditch.—95 to 109 (odd), Great Eastern-st., u.t. 51 yrs., g.r. 104*l.* 1s. 10d., r. 421*l.* 16s. 2,750
Finsbury.—1, 2, and 3, Glover-st., u.t. 51 yrs, g.r. 104*l.* 1s. 10d., r. 424*l.* 1,675
Singer-st., a block of model dwellings, u.t. 51 yrs., g.r. 104*l.* 1s. 10d., r. 418*l.* 12s. 1,975
54 to 60 (even), Paul-st., and "Victoria Chambers," in Luke-st., &c., u.t. 53½ yrs., g.r. 237*l.* 8s., r. 1,420*l.* 18s. 7,075
Pimlico.—35, Hindon-st., u.t. 27 yrs., g.r. 4*l.*, r. 60*l.* 535
Stratford.—9 and 10, Beechey-pl., u.t. 977 yrs., g.r. 4*l.* 4s. £300
Wimbledon.—10 and 11, East-rd., f., r. 36*l.* 8s. 360
Raynes-pk.—55 and 57, Lambton-rd., f., r. 54*l.* 750
East Molesey.—Park-rd., "The Cedars," u.t. 61 yrs., g.r. 4*l.* 10s. 138

By T. C. KING.

Lewisham.—Sunninghill-rd., f.g.r. 115*l.*, reversion in 84 yrs. 3,425
Loampit Hill, f.g.r. 5*l.*, reversion in 84 yrs. 404

By A. J. SHEFFIELD.

Whitechapel.—10 to 13, Buckle-st., u.t. 4½ yrs., g.r. 170*l.*, r. 466*l.* 14s. 540
Poplar.—45, Tetley-st., u.t. 45¾ yrs., g.r. 3*l.* 115
Grove Villas, f.g.r. 13*l.* 10s., reversion in 45¾ yrs. 360
Barking.—Loxford-rd., f.g.r. 14*l.*, reversion in 999 yrs. 350

By T. B. WESTACOTT.

Victoria-pk.—101, 103, and 105, Old Ford-rd., u.t. 57 yrs., g.r. 11*l.*, r. 90*l.* 840
Poplar.—18, Joshua-st., u.t. 43 yrs., g.r. 3*l.* 125
Walthamstow.—St. James-st., f.g.r. 13*l.*, reversion in 85 yrs. 330
Frederick-st., f.g.r. 32*l.*, reversion in 85 yrs. 800
Stoke Newington.—Church-st., f.g.r. 50*l.*, reversion in 8 yrs. 1,275
Stratford.—Maryland-rd., f.g.r. 10*l.*, reversion in 66 yrs. 260
Islington.—65, Cloudesley-rd., f., r. 30*l.* 330
Poplar.—39, 41, and 43, Wilson-st., u.t. 42¼ yrs., g.r. 9*l.* 495
13 to 17, Johnson-st., u.t. 42¼ yrs., g.r. 15*l.* 715
15, Brunswick-st., u.t. 24 yrs., g.r. 4*l.* 1s. 160

By DEBENHAM, TEWSON, & Co. (at Winchester House).

Leytonstone.—Leytonstone-rd, "The Wanstead Slip Conservative Club," f. 2,000
Grays, Essex.—High-st., "The Theobald's Arms," p.-h. and shop adjoining, f., r. 130*l.* 5,500
145 and 147, High-st., f., r. 30*l.* 5s. 550
Argent-st., "Sherfield House," and 2a. 2r. 32p., f. 2,770
Argent-st., 3 building plots, f. 750
Sherfield-rd., a building plot, f. 820
New-rd., a building plot, f. 660
109, 111. and 113, High-st., f. 1,800
Manor Way, a block of building land, 6a. 0r. 7p., f. 700
132 to 138 (even), Argent-st., and 4, 6, and 8, Tasker-sq., f., r. 30*l.* 500
Grove-rd., a block of building land, 1a. 1r. 34p., f. 850
5 to 7 (odd), Maple-rd., f. 2,410
Elm-rd., 3 blocks of building land, 55a. 3r. 25p., f. 3,420
56 to 70 (even), Grove-rd., f. 1,110
Grove-rd., a building plot, f. 150
Arthur-st., 2 building plots, f. 330
East Thurrock-rd., 2 building plots, f. 200
Salisbury-rd., 2 building plots, f. 240
Bridge-rd., a building plot, f. 105
Bridge-rd., a block of land and 3 cottages, 20a. 3r. 37p., f. 2,070
White Hall-lane, 2 blocks of land, 6a. 1r. 12p., f. 890
Palmer's-av., 2 blocks of land, 11a. 1r. 16p., f. 2,725
Orsett-rd., "Grays Hall Farm" and 216a. 2r. 26p., f., with the Manor of Grays Thurrock... 6,500
Dell-rd., enclosures of land, 7a. 3r. 37p., f. ... 780
Gray's Hall Hill, enclosures of land, 4a. 3r. 23p., f. £410
Argent-st., "The Town Wharf," with Chalk Quarry and premises, also 151, High-st., f. 5,100
Manor Way, &c., 3 blocks of riverside land, 69a. 1r. 1p., f., including 6*l.* rent for three easements 5,400
Manor Way, a freehold wharf and 4a. 2r. 10p. 1,500
Manor Way, a block of riverside land, 29a. 1r. 9p., f. 2,600
Rents for wayleaves, amounting to 2*l.* 10s. 35
Little Thurrock, an enclosure, 4a. 0r. 35p., f. 560
Horndon, Essex.—"Arden Hall Farm," 248a. 3r. 38p., f., including manors 2,250
Enclosures of land, 11a. 0r. 15p. 115
Orsett, Essex.—"Ongar Hall Farm," 246a. 0r. 3p., f. 2,400
Bulphan, Essex.—"Appleton's Farm," 95a. 1r. 29p., f. 850
"Castle Farm," 59a. 3r. 21p., f. 530
Grays, Essex.—Orsett-rd., four building plots, f. 1,375
Dell-rd., two building plots, f. 535
Hathaway-rd., two building plots, f. 455
Dell-rd., a block of building land, 12a. 3r. f. 1,625
Bridge-rd., "Bell-row Cottages," and 9a. 3r. 34p., f. 1,700
Bridge-rd., two blocks of building land, f. 570
Bridge-rd., "The Sports Grounds," 7a. 3r. 18p., f., r. 45*l.* 1,500
Clarence-rd., &c., seven blocks of building and garden land, f. 1,900
London-rd., &c., three blocks of building land, f. 920
82, 152, and 154, High-st., f., r. 64*l.* 1,625
29 to 63 (odd), Clarence-rd., f. 3,360
2, 4, and 6, Milton-rd., f. 530
Brooke-rd., a plot of land, f. 220
High-st., f.g.r. 17*l.* 10s., reversion in 96½ yrs. 540
Palmer's-av., f.g.r. 14*l.*, reversion in 95½ yrs. 410
Orsett-rd., f.g.r. 22*l.* 10s., reversions in 95 and 88½ yrs. 630
New-rd., f.g.r. 56*l.*, reversion in 95 to 98 yrs. 1,670
Sherfield-rd., &c., f.g.r. 27*l.* reversion in 95½ yrs. 730
High-st., f.g.r. 75*l.*, reversion in 98½ yrs. 1,725
Goldsmith's Wharf, f.g.r. 55*l.*, reversion in 98 yrs. 1,350
Bridge-rd., f.g.r. 19*l.* 12s., reversion in 95½ yrs. 500
Chadwell-rd., f.g.r. 5*l.*, reversion in 98 yrs. 150

December 4.—By NOKES & NOKES.

Camden Town.—130 and 132, Torriano-av., u.t. 44 yrs., g.r. 11*l.*, r. 67*l.* 575
Streatham.—57 to 79 (odd), Sunnyhill-rd., u.t. 36½ yrs., g.r. 30*l.* 1,875
6 to 20 (even), Angles-rd., u.t. 56¼ yrs., g.r. 40*l.* 14s. 8d. 1,880

By SEDGWICK, SON, & WEALL.

Drury-lane.—No. 176, u.t. 816 yrs., g.r. 1*l.* 815

By RUTLEY, SON, & VINE.

Highbury.—Leconfield-rd., "Roseland House," and Leconfield Works, u.t. 53 yrs., g.r. 2*l.*, r. 90*l.* 1,100
Camden Town.—49 and 113, Arlington-rd., f., r. 107*l.* 2s. 1,280

December 5.—By WATERS & RAWLENCE (at Shaftesbury).

Cann, Dorset.—"Frog Hole Farm," 43a. 2r. 14p., f. 1,200

December 7.—By RUTTER & RUTTER.

Chelmsford, Essex.—Duke-st., "The George Hotel," f., r. 80*l.* £2,550

By WHETHERLY & HASLETT.

Streatham.—54 and 56, Lewin-rd., f., r. 165*l.* 2,620

By CARTER & Co. (at Blackpool).

Carleton, Lancashire.—"The Castle" hotel and gardens, 5 a., f. 10,000

By SHEPHERD & SON (at Bury).

Helmshore, Lancashire.—"Shore Farm," 17 a. 1 r. 26 p., f. and c. 433

Spotland, Lancashire.—"Cheesden Barn" and "Cheesden Fold" farms, 122 a. 1 r. 17 p., f.... 1,460

Perpetual yearly rents of 7*l.* 12s. 6d. 179

Yearly rent of 6*l.* for 52½ yrs 150

Heap, Lancashire.—Enclosure of land, 3 a. 1 r. 19 p., f. 500

December 8.—By COCKETT & HENDERSON.

Hackney.—8, Minson-rd., u.t. 50 yrs., g.r. 5*l.* 300

By DEBENHAM, TEWSON, & Co.

Regent's Pk.—8, Park-sq. West, u.t. 26¼ yrs., g.r. 3*l.* 3s. 1,310

Islington.—Upper-st., f.g.r. 30*l.*, reversion in 78 yrs. 1,090

Upper-st., f.g.r. 10*l.*, reversion in 59½ yrs. 420

By HARDS & BRADLY.

Lewisham.—50, Porson-st., u.t. 74 yrs., g.r. 2*l.* 10s. 185

By MAY & ROWDEN.

Marylebone.—74, High-st., u.t. 7½ yrs., g.r. 18*l.*, e.r. 90*l.* 150

42, Devonshire-st. and 42, Devonshire-mews, u.t. 12½ yrs., g.r. 70*l.*, r. 190*l.* 1,000

By T. B. WESTACOTT.

Holloway.—473, 475, 477, and 479, Holloway-rd., u.t. 81 yrs., g.r. 38*l.*, r. 290*l.* 3,570

By FLEURET, SONS, & ADAMS (at Masons' Hall Tavern).

City of London.—Upper Thames-st., freehold building site, with licence attached 7,000

By T. LEWIS (at Abergavenny).

Cwmyoy, Hereford.—"The Farm," 48 a. 3r. 38 p., f. 420

"Pentwyn Farm," 33 a. 2r. 30 p., f. 225

December 9.—By HANCOCK, HENLEY, & SLADE.

Westbourne Pk. — 75, Westbourne Pk.-villas, u.t. 39½ yrs., g.r. 7*l.* 10s., r. 83*l.* 4s. 550

By FRANK JOLLY & Co.

Stratford.—28, Chandos-rd. West, f., e.r. 28*l.* 355

By CHARLES & TUBBS.

Kentish Town.—Willes-rd., &c. i.g.r. 148*l.*, u.t. 25 yrs., g.r. 33*l.* 1,710

Willes-rd., &c., i.g.r. 44*l.*, u.t. 25 yrs., g.r. 11*l.*... 505

Clapham Common, South side.—"Belle Vue" beer-house, f.g.r. 7*l.* 17s. 6d., reversion in 12 yrs. 1,650

Clapham.—Clapham Pk.-rd., f.g.r. 7*l.* 17s. 6d., reversion in 12 yrs. 1,300

4 and 6, Clapham Pk.-rd., f., r. 130*l.* 2,625

Clapham Pk.-rd., a profit rental of 25*l.* for 12 yrs. 220

By D. J. CHATTELL.

Tooting.—2 and 3, Bridge-ter., u.t. 76¼ yrs., g.r. 12*l.*, r. 44*l.* .....

Wimbledon.—49 and 51, Amity-grove, u.t. 79½ yrs., g.r. 6*l.* .....

By W. R. NICHOLAS & Co.

Camberwell.—7 to 19 (odd), Harling-st., u.t. 85½ yrs., g.r. 49*l.*, r. 325*l.* .....

54, Warrior-rd., u.t 48½ yrs., g.r. 4*l.* .....

By HAROLD GRIFFIN.

New Bond-st.—Bloomfield-pl., a block of model dwellings, u.t. 34 yrs., g.r. 55*l.*, r. 404*l.* 6s. ...

Shepherd's Bush.—169, Goldhawk-rd., u.t. 55 yrs., g.r. 5*l.*, r. 40*l.* .....

Pimlico.—20, 21, and 22, Denbigh-pl., u.t. 33 yrs., g.r. 21*l.*, r. 165*l.* .....

18, Clarendon-st., u.t. 36 yrs., g r. 6*l.*, r. 42*l.* .....

New Bond-st.—39, Grosvenor Mews, u.t. 17 yrs., g.r. 36*l.*, r. 70*l.* .....

Chelsea.—5, Bywater-st., u.t. 12 yrs., g.r. 5*l.* 5s., r. 32*l.* .....

35, Bramerton-st., u.t. 44 yrs., g.r. 4*l.* 10s., r. 28*l.* .....

Fulham.—17, Stamford-rd., u.t. 55 yrs., g.r. 4*l.* .....

Battersea.—65, Worfield-st., u.t. 90 yrs., g.r. 7*l.*, e.r. 38*l.* .....

209, Battersea Pk.-rd., u.t. 65 yrs., g.r. 6*l.*, r. 70*l.* .....

7, 8, and 9, Palmerston-st., u.t. 65 yrs., g.r. 12*l.* .....

6, 7, 8, and 9, Palmerston-ter., u.t. 65 yrs., g.r. nil .....

24 and 25, Russell-st., u.t. 65 yrs., g.r. 9*l.* .....

26, Russell-st., u.t. 65 yrs., g.r. nil .....

2 to 18 (even) and 33, Freeland-st., u.t. 69 yrs., g.r. 42*l.* .....

108, 112, and 114, Bridge-rd. West, u.t. 69 yrs., g.r. 21*l.* .....

December 10.—By C. C. & T. MOORE.

King's Cross.—190, Caledonian-rd., u.t. 48 yrs., g.r. 4*l.*, r. 65*l.* .....

12, Bryan-pl., u.t. 48 yrs., g.r. 1*l.* 10s. .....

Bromley-by-Bow.—4 to 12 (even), Swaton-rd., u.t. 66 yrs., g.r. 18*l.* 15s. .....

Poplar.—18 and 20, Ship-st., u.t 55 yrs., g.r. 8*l.* ....

Stratford.—5, Albert-sq., f., r. 33*l.* .....

Edmonton.—5 to 9, Jeremy's Green-lane, u.t. 82 yrs., g.r. 11*l.* 5s. .....

By NEWBON & Co.

Clapham.—2 and 4, High-st., f., r. 180*l.* .....

Islington.—20 and 22, Park-st., u.t. 20 yrs., g.r. 16*l.*, r. 74*l.* .....

60 and 62, Shepperton-rd., u.t. 12 yrs., g.r. 2*l.* 16s., r. 67*l.* .....

Highbury.—67, Avenell-rd., u.t. 77½ yrs., g.r. 8*l.*, r. 40*l.* .....

By STIMSON & SONS.

Shepherd's Bush.—15, 17, and 19, Goldhawk-rd.; and 1a, Bamborough-gdns, f., r. 207*l.* .....

Chelsea.—26 and 26a, Markham-st., u.t. 29 yrs., g.r. 9*l.*, r. 60*l.* .....

Isleworth, Middlesex.—Clifton-ter., f.g.r. 27*l.*, reversion in 90 yrs. .....

Heston-rd., f.g.r. 25*l.*, reversion in 90 yrs. .....

Sussex-cottages, f.g.r. 19*l.* 5s., reversion in 90 yrs. .....

Peckham.—22 and 24, Philip-rd., u.t. 57½ yrs., g.r. 10*l.*, r. 62*l.* .....

Norbiton.—Brunswick-rd., "Coniston," u.t. 87½ yrs., g.r. 9*l.*, e.r. 55*l.* .....

Old Ford.—13 and 17, Milton-rd., u.t. 67 yrs., g.r. 6*l.* 6s. £310

2 and 3, Beale-pl., u.t. 65 yrs., g.r. 5*l.* 9s. 240

33, Wennington-rd., u.t. 60½ yrs., g.r. 3*l.* 3s. 185

Twickenham.—13, Manor-rd., u.t. 59 yrs., g.r. 10*l.*, e.r. 40*l.* 170

By A. SQUIRE.

Holloway.—5 and 7, Bardolph-rd., u.t. 70 yrs., g.r. 14*l.*, r. 74*l.* 700

By HERRING, SON, & DAW.

Clapham.—27, Park-hill, f. 1,005

King's-rd., "Evesley," u.t. 38 yrs., g.r. 20*l.* ... 410

December 11.—By BAKER & SONS.

Paddington.—193, Ashmore-rd., u.t. 83½ yrs., g.r. 7*l.*, e.r. 42*l.* 420

New Southgate.—74 and 76, Glenthorne-rd., u.t. 94¾ yrs., g.r. 4*l.*, r. 52*l.* 260

By FIELD & SONS.

Bermondsey.—9, Leighton-ter., u.t. 41 yrs., g.r. 5*l.*, e.r. 52*l.* 380

Notting Hill.—5, William-st., u.t. 53 yrs., g.r. 5*l.*, r. 39*l.* 300

By G. GOULDSMITH, SON, & Co.

Wimbledon.—Park Side, "Tudor House," and 3r. 1 p., f. 2,650

3, Ridgway, f., r. 25*l.* 940

By E. & S. SMITH.

Camden Town.—11 and 12, Little Randolph-st., u.t. 26½ yrs., g.r. 12*l.*, r. 69*l.* 350

Islington.—5, 7, and 9, Prebend-st., c. r. 114*l.* 8s... 755

Paddington.—3, Manor-pl., u.t. 66½ yrs., g.r. 15*l.* 15s., r. 60*l.* 450

Clerkenwell.—52, Margaret-st., u.t. 19 yrs., g.r. 5*l.*, r. 36*l.* 165

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental: u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.

PRICES CURRENT OF MATERIALS.

TIMBER.

Greenheart, B.G.	ton	8/0/0 — 9/0/0
Teak, E.I. ..load		11/0/0 — 16/0/0
Sequoia, U.S.ft.cu		2/0 — 2/1
Ash, Canada load		2/10/0 — 3/15/0
Birch, do.		2/10/0 — 5/5/0
Elm, do.		2/10/0 — 4/15/0
Fir, Dantsic, &c..		2/10/0 — 4/10/0
Oak, do.		2/10/0 — 3/10/0
Canada		4/15/0 — 5/15/0
Pine, Canada red		0/0/0 — 0/0/0
Do. Yellow		2/0/0 — 4/0/0
Lath, Dantsic, fath		4/10/0 — 5/10/0
St. Petersburg..		5/10/0 — 6/10/0
Wainscot, Riga &c., log...		2/10/0 — 4/15/0
Odessa, crown....		2/10/0 — 4/15/0
Deals, Finland and & 1st std 100		8/10/0 — 9/0/0
Do. 4th & 3rd ..		8/10/0 — 9/0/0
Do. Riga		7/0/0 — 8/0/0
St. Petersburg, 1st yellow....		10/10/0 — 13/0/0
Do. 2nd yellow		9/10/0 — 10/10/0
Do. white		9/0/0 — 11/0/0
Swedish.....		8/10/0 — 16/0/0
White Sea.....		10/0/0 — 16/10/0
Canada, Pine 1st		21/0/0 — 23/10/0
Do. do. 2nd		15/0/0 — 17/0/0
Do. do. 3rd, &c.		7/10/0 — 8/0/0
Do. Spruce, 1st.		9/0/0 — 10/10/0
Do. do. 3rd and 2nd		7/10/0 — 8/15/0
New Brunswick		7/5/0 — 7/15/0
Battens, all kinds		5/0/0 — 20/0/0
Flooring boards, sq., 1 in. prep. 1st.		0/9 6 — 0/16,6
Do. 2nd.....		c/8/0 — c/13/0
Other qualities—		0/6/0 — 0/7/6
Cedar, Cuba, ft.		/4½ — /5
Honduras, &c.		/4 — /5
Mahogany, Cuba		/4½ — /6
St. Domingo cargo av.		/4½ — 2/3
Mexican, do. do.		/4 — /5
Tobasco, do. do.		/5 — /7
Honduras, do. ..		/5 — /6½
Box, Turkey ton		4/0/0 — 15/0/0
Rose, Rio.....		7/0/0 — 16/0/0
Bahia		6/0/0 — 15/0/0
Satin, St. Doming		0/0/7 — 0/1/0

TIMBER *(continued)*.

Satin, Porto Rico	0/0/7	0/1/6
Walnut, Italian ..	0/0/3	0/0/7

METALS.

Iron—Pig, in Scotland .....ton	2/8/1½	2/8/4½
Bar, Welsh, in London	5/15/0	5/17/6
Do. do. at works in Wales.....	5/10/0	5/12/6
Do. Staffordshire, in London.....	5/15/0	6/10/0
COPPER—British cake and ingot	52/0/0	52/10/0
Best selected ..	53/0/0	53/10/0
Sheets, strong..	58/10/0	59/10/0
Chili bars	48/10/0	0/0/0
YELLOWMTALlb	c/0/5	0/0/5½
LEAD—Pig, Spanish ....ton	11/8/9	11/10/0
English com. brands	11/12/6	11/15/0
Sheet, English 6 lbs. per sq. ft and upwards ..	12/10/0	0/0/0
Pipe	13/0/0	0/0/0
ZINC—English sheet.....ton	20/10/0	0/0/0
Vieille Montagne	21/10/0	0/0/0
Spelter	17/10/0	0/0/0
TIN—Straits	57/17/6	0/0/0
Australian.....	59/15/0	0/0/0
English Ingots..	61/15/0	62/0/0
Banca	60/10/0	61/0/0
Billiton	59/15/0	60/0/0

OILS.

Linseed .....ton	15/10/0	0/0/0
Cocoanut, Cochin	28/0/0	0/0/0
Do. Ceylon	24/0/0	0/0/0
Palm, Lagos	24/10/0	0/0/0
Rapeseed, English pale	27/10/0	28/0/0
Do. brown	27/0/0	27/10/0
Cottonseed ref. ..	15/17/6	16/10/0
Oleine.....	18/10/0	19/10/0
Lubricating U.S.	0/6/3	0/7/6
Do. black	0/4/9	0/6/6
TAR—Stockholm barrel	22's	0/0/0
Archangel.....	0/12/6	0/0/0
Turpentine....ton	2:/7/6	0/0/0

TENDERS.

*** Owing to the Christmas holidays, the *Builder* will be published next week on Thursday, instead of Friday. All communications for the Editor must therefore reach our office not later than 10 a.m. on Wednesday morning.

BRADFORD.—Accepted for the erection of a weaving-shed, Laisterdyke. Messrs. Leadley & Son, architects, 3, Coleridge-place, Bradford:—

Joinery.—Henry Thirkill, Nelson-street, Bradford ..
Plumbing.—Chas. Hornroyd, Bradford .....
Plastering.—Thos. Bolton, Tudor-street, Bradford ..
Slating.—James Smithies, Slate Merchant, Bradford
Ironfounding.—Roberts & Co., Ltd., Cutler Heights, Bradford ..... } £450

CARLISLE.—Accepted for the erection of three shops, Botchergate, for Mr. W. D. Todd. Mr. H. Higginson, architect, 3, Lonsdale-street, Carlisle. Quantities by the architect:—

Contracting.—J. & W. Davidson, Corporation-road
Joinery.—J. H. Reed, Edward-street.....
Plumbing.—Wm. Anderson, Lowther-street .....
Slating.—J. T. Kellett, Sunnyside .....
Plastering.—S. Ferguson & Sons, Denton-street ..
Painting and Glazing.—W. N. Ballantine, Lonsdale-street ..... } £1,728

[All of Carlisle.]

CHARD (Somerset).—For the erection of a five-storied fireproof staircase. Holyrood Mill, for Messrs. Gifford, Fox, & Co. Mr. J. F. Trew, C.E., County-chambers, Gloucester:—

J. H. Bishop ..... £230 | Andrew & Hawksleys..... £176

CROYDON.—For the erection of two pairs of semi-detached cottage homes, with outbuildings, for the Guardians of the Croydon Union. Mr. F. West, architect, Croydon. Quantities by the architect:—

A. Acworth	£3,682	Alfred Bullock.....	£3,241
E. Goulder	3,496	A. McSweeny.....	3,200
Marr & Carpenter.....	3,462	E. P. Bulled & Co.....	3,197
S. Hart	3,440	Huntley Bros.....	3,118
J. Smith & Sons.....	3,433	H. Bacon	3,100
Elgar & Burbridge	3,427	F. W. Sedgwick.....	2,913
H. Brown	3,250	W. Smith & Son.....	2,850
G. E. Bryan & Son	3,249		

DARTFORD.—For the erection of sewerage works, &c., Fulwich-road, for the Urban District Council. Mr. W. Harston, C.E., Town Surveyor, High-street, Dartford:—

J. & J. Jones & Fields ... £241 | J. Mowlem & Co.*..... £159
The Kent Road Co..... 228 | * Accepted.

DARTFORD.—For the execution of paving and road works, Gas-lane, for the Urban District Council. Mr. W. Harston, C.E., High-street, Dartford:—

Road Works.

T. Adams	£451 1 6	W. Wady	£337 0 0
Kent Road Co.	426 13 8	Mowlem & Co., London*	397 1 9

Footways.

Mowlem & Co., London* ..... 3s. 6d. per super yard.
* Accepted.

EDMONTON.—For the execution of street works, Dryden-road, and others, for the Edmonton Urban District Council. Mr. G. Eedes Eachus, C.E., Town Hall, Lower Edmonton, N. Quantities by Messrs. Waldram & Son:—

W. Griffiths, 283, Kingsland-rd., N. (all streets except Brettenham-rd, and excepting footways)*	£3,729 5 4
F. Jones, Silver-st., Edmonton (Brettenham-rd., excepting footways)*	859 12 2
Asphalte Limestone Concrete Company, 52, Queen Victoria-street (asphalte footways, 10 years' guarantee)*	884 12 0
Victoria Stone Company, 283A, Kingsland-rd., N. (paving footways, 2 years' guarantee)*	759 6 9
A. C. W. Hobman & Co. (all streets except Croyland and Brettenham rds)	3,816 6 11
Williamson & Sons, Ltd. (all streets)	6,723 11 4
J. Bloomfield (all streets)	7,311 0 4
T. Adams (all streets).....	7,341 14 3
G. J. Anderson (all streets)	7,373 0 2
Brunswick Rock Asphalte Company (asphalte footways only, 5 years' guarantee)	886 11 1
Val de Travers Asphalte Company (asphalte footways only, exclusive of concrete)	896 5 9
French Asphalte Company (asphalte footways only, 15 years' guarantee).....	1,098 9 0
Limmer Asphalte Company (asphalte footways only, 10 years' guarantee).....	1,291 6 8

* Accepted.

FIVEMILETOWN (Ireland).—For the construction of waterworks, for the Clogher Union Guardians. Mr. J. L. D. Meares, C.E., Town Hall, Newry:—

W. McMahon..... £1,644 1 1
J. McKee & Son, Dungannon (accepted)..... 1,506 10 4

LONDON.—For the erection of flats and shops in the Wandsworth-road, for Mr. James Webber. Mr. T. E. Lidiard James, architect, Lonsdale-chambers, 27, Chancery-lane. Quantities by Messrs. Evans & Deacon:—

W. Vogel Goad	£9,270	Lorden & Sons	£7,949
J. Carmichael	8,118	Holloway Bros.*.....	7,925
J. Garrett & Son	7,985	* Accepted.	

LONDON.—For alterations at 146A, Stockwell-road, for Mr. Wm. Foster. Mr. Percy H. Clarke, surveyor, 2, Lancaster-place, Strand:—

J. Jackson	£285	Thos. Brereton*	£185
James Parsons	249	* Accepted.	

LONDON.—For alterations and repairs to thirty houses on Springfield Estate, Wandsworth, for Mr. G. D. Faber. Mr. Percy H. Clarke, surveyor, 2, Lancaster-place, Strand:—

H. Loader.....	£3,055	James Parsons*	£1,345
T. Ireland & Sons.....	2,970	* Accepted.	

LONDON.—For alterations at 30, Church-street, Camberwell, for Mr. James Garrad. Mr. Percy H. Clarke, surveyor, 2, Lancaster-place, Strand:—

Stimpson & Co.	£826	J. Parsons*	£665
Balaam Bros.	811	* Accepted.	

LONDON.—For alterations and additions to No. 124, Euston-road, N.W. Messrs. Inman & Brown, architects, 7, Bedford-row, W.C.:—

Lown & Sons	£310	H. M. Dove*	£248
Courtney & Fairbairn	275	* Accepted.	

LONDON.—For repairs to Nos. 3 to 13, Mathews-terrace, Angel-lane, Stratford. Messrs. Inman & Brown, architects, 7, Bedford-row, W.C.:—

J. T. Robey	£281 15	J. Verlander	£165 0
J. Rivett*	188 0	* Accepted.	

LONDON.—Paddington High School, Westbourne-grove. W. Fitting up chemical laboratory, &c.

F. T. Chinchen..... £250

[No competition.]

LONDON.—For rebuilding the Gresham Baptist Chapel, Brixton. Mr. J. William Stevens, architect, 21, New Bridge-street, City, E.C. Quantities supplied:—

White & Co.	£4,995	Jas. Smith & Son	£4,567
J. Bowyer & Co.	4,750	F. & H. F. Higgs	4,444
Prestige & Co.	4,647	Holliday & Greenwood ..	4,431
Holloway Bros.	4,640	Peacock Bros.	4,295
Carmichael	4,600	Whitehead & Co.*..... ..	4,270

* Accepted.

MANCHESTER.—For the erection of a warehouse and stabling, Hyde-road, for Messrs. Slack & Cox, Limited. Mr. W. W. Kenworthy, architect, 7, Chapel-walks, Manchester. Quantities by the architect:—

W. Southern & Sons.....	£3,290	J. Ramsbottom	£3,154
R. Carlisle.....	3,259	J. Roberts.....	3,127
H. Mathews.....	3,250	W. Cunliffe	3,103
Hill & Heys.....	3,250	C. H Normanton	3,077
G. Macfarlane	3,209	R. Neil & Sons	3,060
J. Blanchard.....	3,170	Wilson & Toft.....	3,044
Torrance Bros.....	3,167	Burgess & Gault.....	3,020

Amended.

Burgess & Gault* ..... £2,658 | Wilson & Toft..... £2,682
* Accepted.

MIDDLESBROUGH.—For the erection of school buildings, Marton-road, for the Middlesbrough School Board, to accommodate 1,040 children. Mr. J. Mitchell Bottomley, architect, 28, Albert-road, Middlesbrough. Quantities by Mr. R. T. Neilson, Darlington:—

Frank Pattison	£14,431 0	Johnson & Son	£11,899 0
Joseph Elliot	12,880 0	Allison Bros., Middlesbrough*	11,713 0
Marshall & Son	12,792 0	Thos. Dickinson.....	11,223 0
Bastiman Bros.	12,289 10		

* Accepted subject to the approval of the Education Department.

NORTHAMPTON.—For the erection of new shoe factory in Billington-street, Northampton, for Messrs. J. & W. Read. Mr. H. H. Dyer, architect, 1, Sheep-street, Northampton. Quantities by architect:—

Green Bros.....	£1,038 0	T. A. Fisher	£898 12
R. Cosford	1,034 0	A. J. Chown	885 0
J. Cherry.....	1,000 0	J. Garrett	884 10
G. J. Fisher	957 0	G. F. Sharman.....	878 0
W. Heap.....	920 0	J. M. Panting, 39, Holly-road (accepted)	849 0
A. P. Hawtin.....	906 0		

[All of Northampton.]

NOTTINGAM,—For the erection of school buildings, Clifton Estate site, Meadows, for the School Board. Mr. R. C. Clarke, architect, Prudential-buildings, Queen-street, Nottingham:—

J. F. Price	£20,832 0 0	Hodson & Son	£18,300 0 0
T. Cuthbert	19,516 15 0	W. Maule	18,230 0 0
Gilbert & Gabbitass	19,350 0 0	G. A. Pillatt	18,197 0 0
J. Hutchinson	18,940 0 0	T. Barlow	18,096 0 0
Appleby & Lambert	18,795 0 0	Dennett & Ingle	17,860 0 0
F. Messom	18,773 0 0	A. B. Clarke	17,637 0 0
J. H. Vickers, Ltd.	18,388 14 9	E. Hind, Nottingham*	17,146 0 0
H. Vickers	18,353 0 0		
J. Oscroft	18,326 0 0		

* Accepted.

NOTTINGHAM.—For additions to school buildings, Sneinton, for the School Board. Mr. R. C. Clarke, architect, Prudential Buildings, Queen-street, Nottingham:—

G. T. Lovett	£485 0	Appleby & Lambert	440 10
F. Evans	480 0	J. H. Vickers, Ltd.	432 0
J. Hutchinson	462 10	Henry Vickers	430 0
J. Oscroft	454 0	T. Cuthbert (accepted)	412 5

[All of Nottingham.]

STROUD.—For the erection of science and art schools, for the committee. Messrs. Seddon & Fisher, joint architects, 6, Rowcroft, Stroud. Quantities by Mr. Charles H. Gough, 5, John-street, Adelphi:—

S. Cox	£4,912 10 0	Wall & Hook	£4,141 0 0
H. R. Beavis	4,904 13 6	G. H. Wilkins	4,137 0 0
S. Belham & Co.	4,483 0 0	English & Sons	4,114 11 7
W. Bowers & Co.	4,357 12 0	Drew Bros.	4,100 0 0
A. S. Cooke	4,313 3 0	N. Baxter	3,983 0 0
W. Jones	4,170 0 0	Orchard & Peer	3,820 0 0

SOUTHAMPTON.—For laying drains, &c., for the Corporation. Mr. W. B. G. Bennett, Borough Engineer, Municipal Offices, Southampton:—

W. W. Batten	£4,556 17 8	Roe & Grace	£3,621 2 9
J. Porter	4,472 0 0	W. H. Saunders & Co., Bournemouth*	3,250 0 0
F. Osman	3,765 0 0		

* Accepted.

SOUTHEND-ON-SEA.—For the erection of eight shops, Whitegate-road, for Mr. B. W. Tolhurst. Messrs. Thompson & Greenhalgh, architects, Bank-chambers, Southend:—

Kellet	£9,324	Whur	£8,150
Shelbourne & Co.	8,910	West	8,100
Symes	8,780	Dupont	8,095
Davis & Leaney	8,195	Jones & Son, London*	7,424
Woodhams	8,175		

* Accepted.

SOUTHEND-ON-SEA.—For building the substructure of the Hotel Victoria, Whitegate-road, for Mr. S. J. Burdett. Messrs. Thompson & Greenhalgh, architects, Bank-chambers, Southend:—

Pattinson & Sons	£1,195 0	West	£807 0
Jones & Son	1,025 0	Woodhams	888 16
Davis & Leaney	992 0	Dupont	885 0
Whur	915 0	T. Symes, London*	856 0
Shelbourne & Co.	910 0		

* Accepted.

TEDDINGON.—For the formation of roads, paths, &c., at cemetery, Teddington, for the Burial Board. Mr. M. Hainsworth, surveyor, Elmfield House, Teddington:—

H. Lee	£772 13 0	S. Atkins	£661 5 9
Free & Sons	728 0 0	S. Kavanagh, Tolworth*	592 16 9
W. Adamson	719 0 0		

* Accepted.

TRANWELL (near Morpeth).—For the construction of a storage reservoir, &c., for the Corporation. Mr. A. S. Dinning, Engineer, 25, Ellison-place, Newcastle-on-Tyne:—

G. Bailey	£7,787 0 0	Edward Edgar	£4,300 0 0
H. Fotherby & Co.	7,167 17 10	C. B. Williamson & Co.	4,961 15 6
James White	5,000 0 0	William Carr, Hexham*	4,247 13 3
John Carrick	4,867 3 4		
Thos. Bell	4,569 19 9		
R. Carse & Son	4,303 13 10		

* Accepted.

WESTCLIFF-ON-SEA.—For the erection of the substructure of the Queen's Hotel, for Mr. J. J. Wagstaff. Messrs. Thompson & Greenhalgh, architects, Bank-chambers, Southend-on-Sea:—

Pattinson & Sons	£1,444	West	£1,273
Dupont	1,337	Shelbourne & Co.	1,240
Davis & Leaney	1,300	Symes, London (accepted)	1,232

WOODFORD.—For forming roads and sewers in laying out the Grove Lodge Estate, for Mr. J. Maughfling. Mr. W. Seckham Witheridgton, architect and surveyor, 33, Great Tower-street, E.C.:—

Reeves	£3,372 3 9	G. Wilson	£3,063 18 0
Rutty	3,243 0 0	Adams	2,965 4 0
French	3,189 0 0	Gibbs*	2,736 0 3
E. Wilson	3,093 0 0		

* Accepted.

YOXFORD (Suffolk).—For the erection of a new Board School at Yoxford, for the Yoxford School Board. Mr. T. E. Key, architect, 5, Bloomsbury-square, W.C. Quantities by Mr. W. T. Walker, 5, West-street, Finsbury Circus, E.C.:—

A. H. Sampson	£2,057 10 0	A. Brown, Braintree*	£1,673 0 0
Lascelles & Co.	2,010 0 0	G. Barrell	1,670 0 0
C. R. Cole	1,842 15 0	W. H. Gibbs	1,614 0 0
W. Ingram Smith	1,692 7 4		

* Accepted.

TO CORRESPONDENTS.

A. W. B. (Below our limit).—

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Advertisements for the current week's issue are received up to THREE o'clock p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after HALF-PAST ONE p.m. on that day. Those intended for the Front Page should be in by TWELVE noon on WEDNESDAY.

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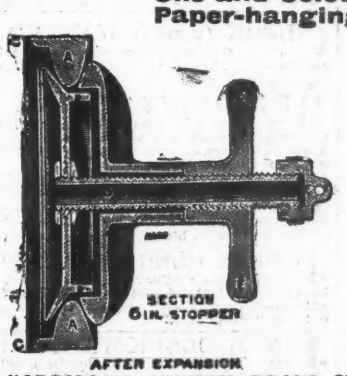

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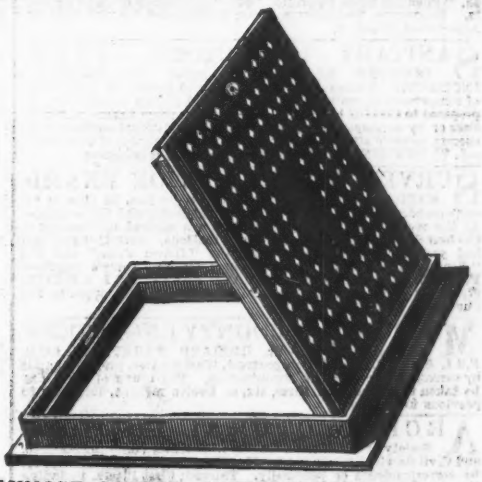

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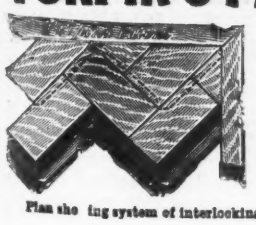

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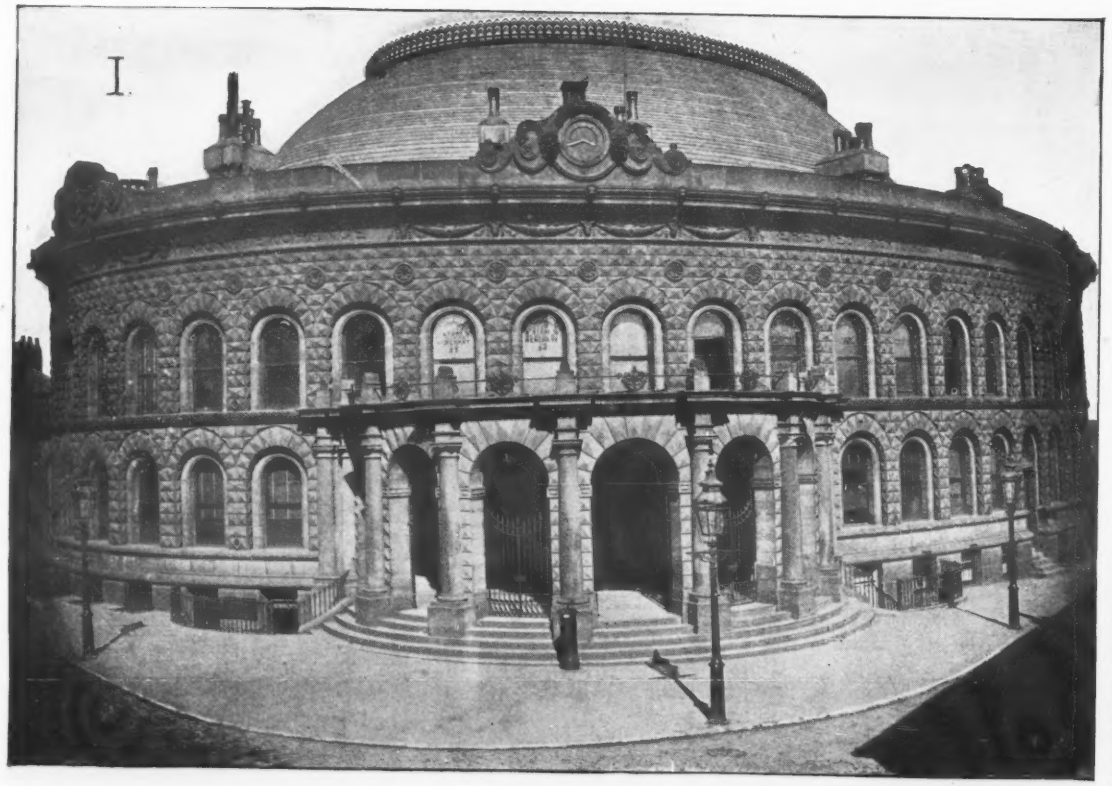

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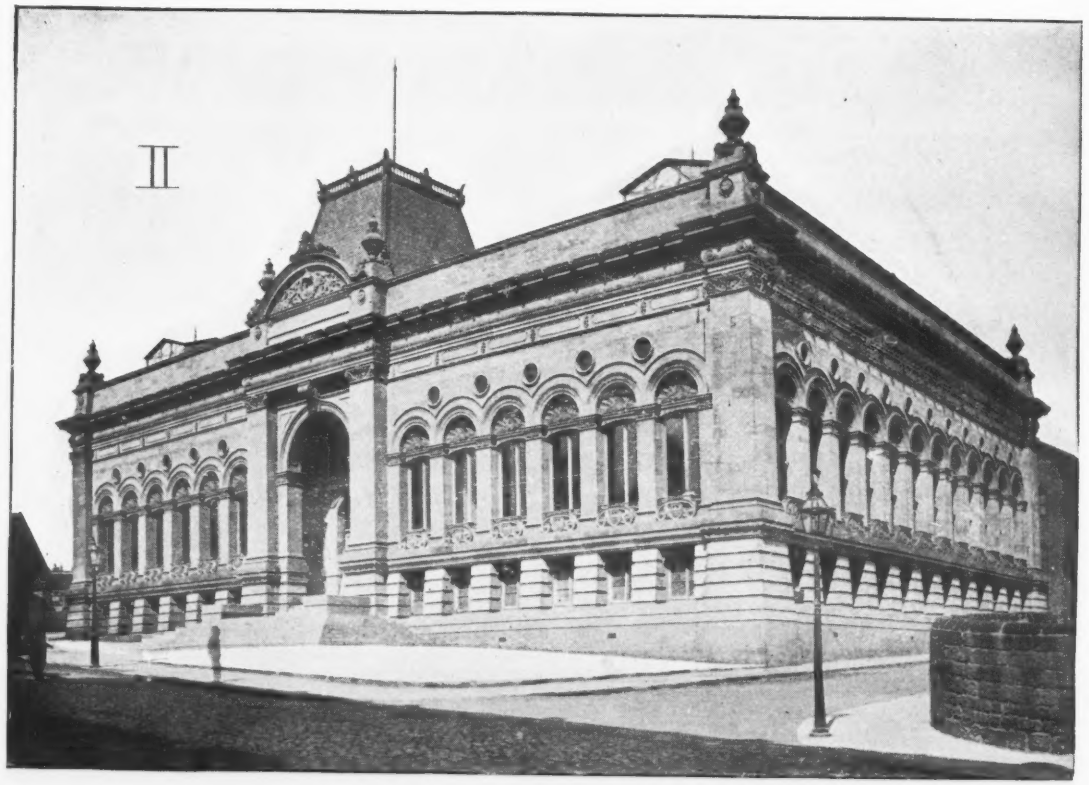

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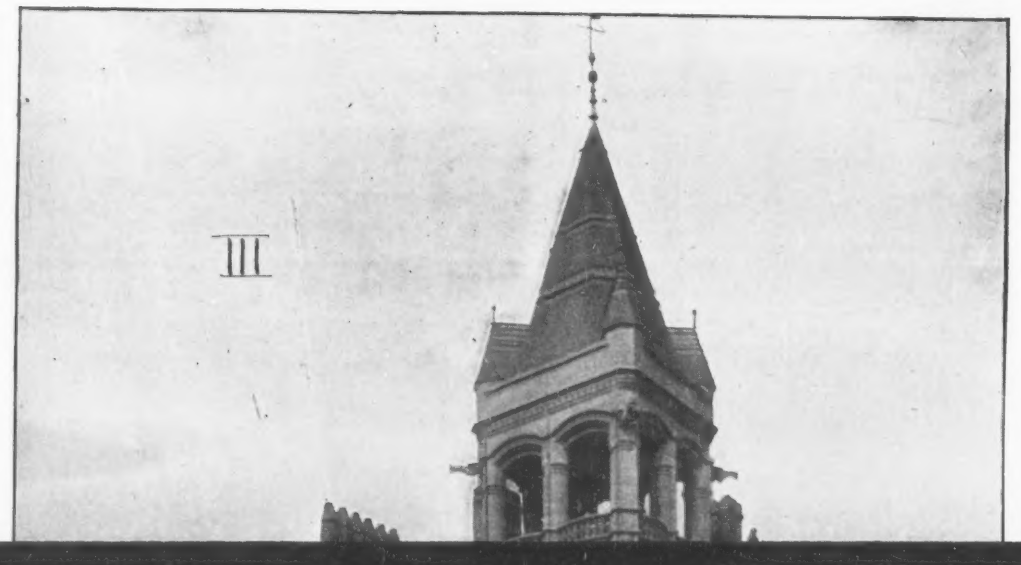

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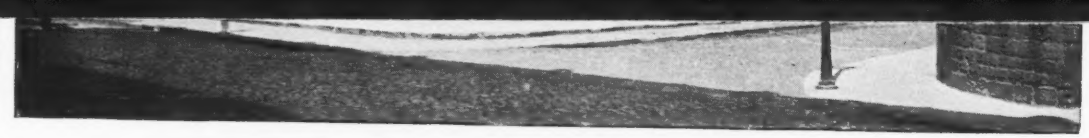

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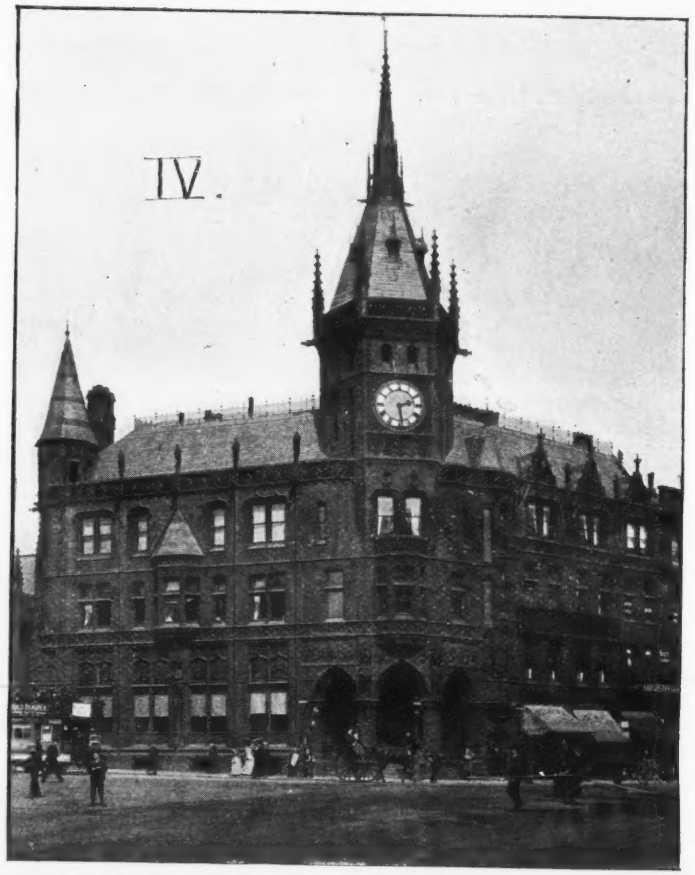

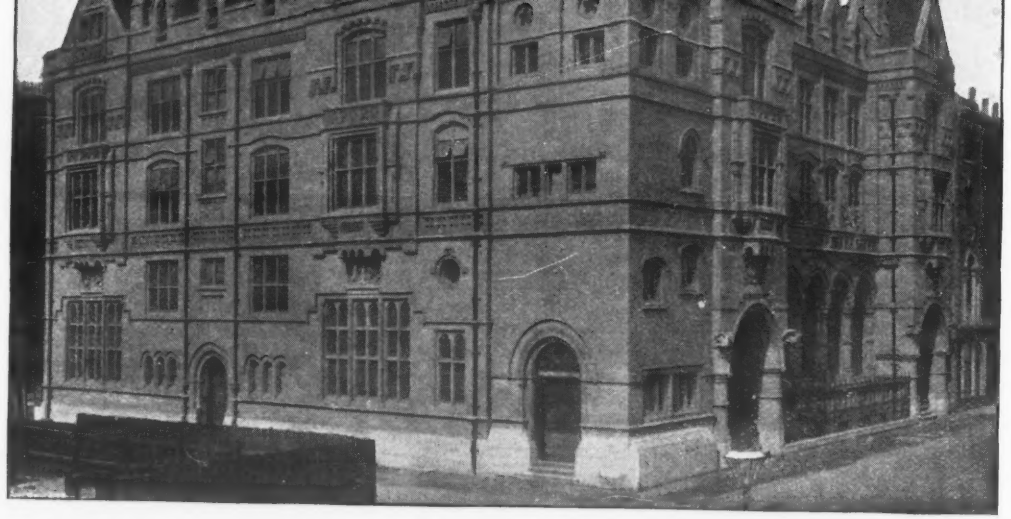

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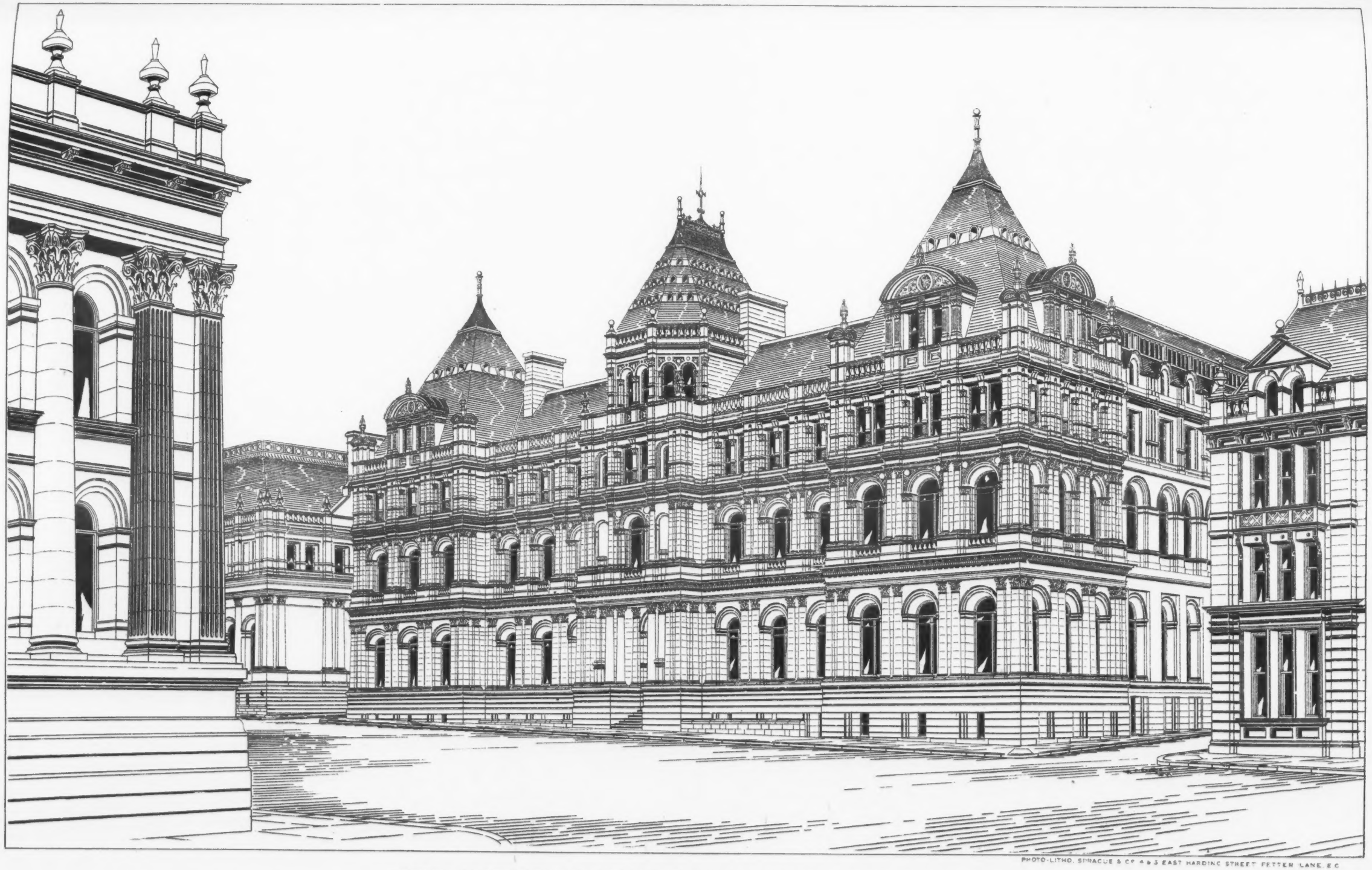

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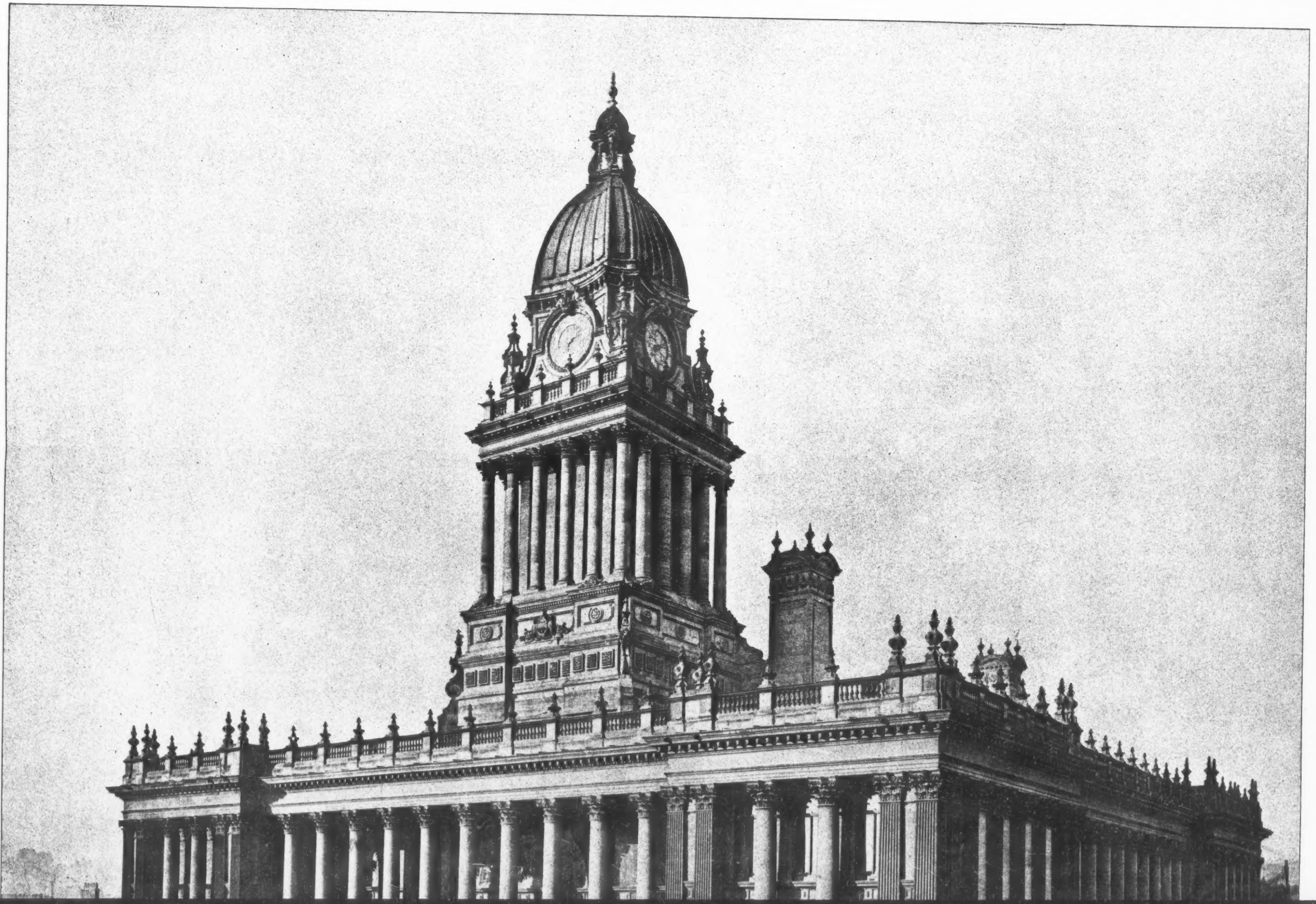

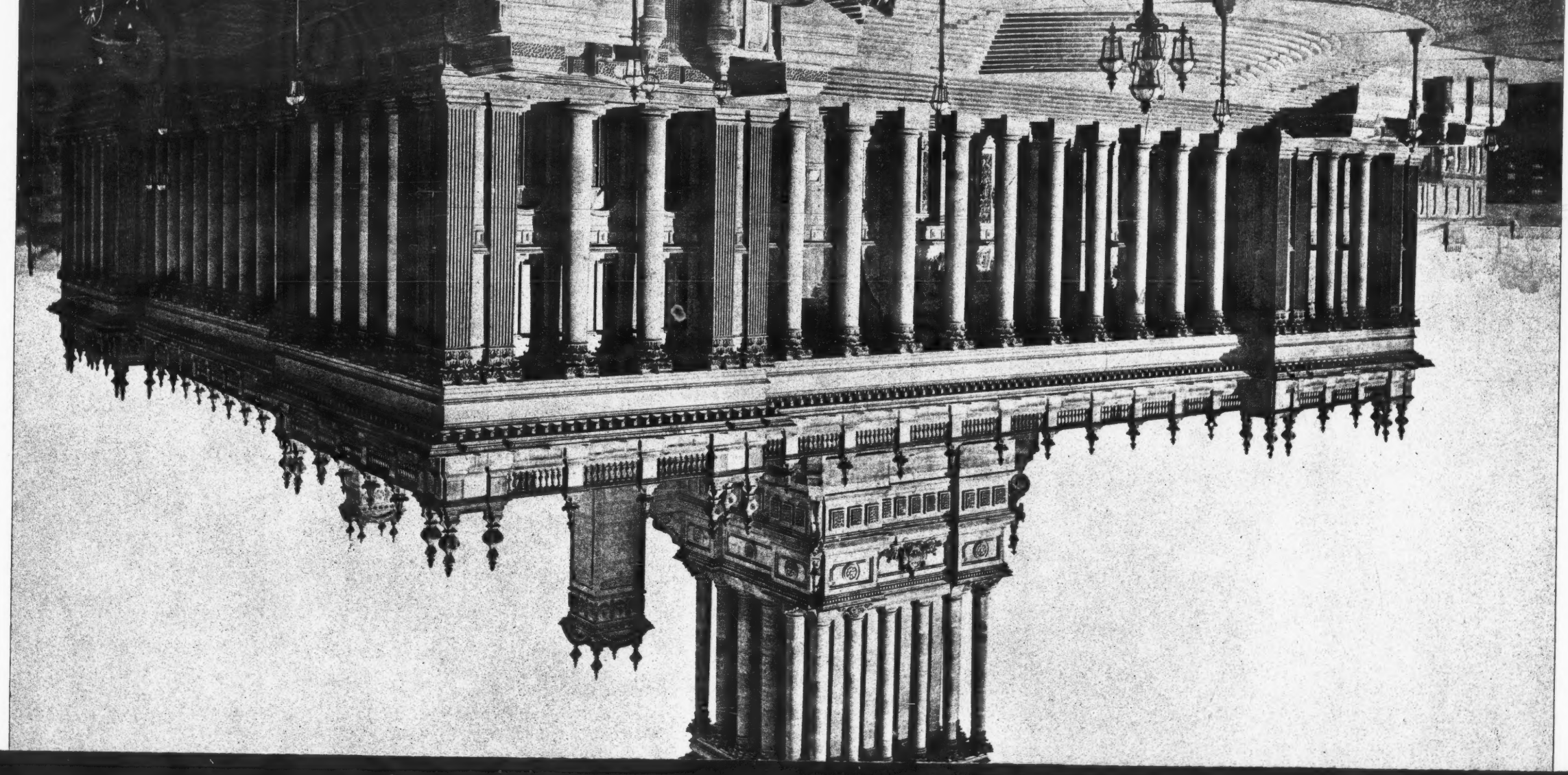

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